REPORT RESUMES

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NONINTELLECTIVE VARIABLES RELATED TO ACADEMIC ACHIEVEMENT OF
BRIGHT JUNIOR HIGH SCHOOL BOYS.
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IN PREVIOUS STUDIES, A NUMBER OF PERSONALITY VARIABLES, INCLUDING ADJUSTMENT, MOTIVE-TO-ACHIEVE, MOTIVE-TO-AFFILIATE, ACCEPTANCE OF SELF AND OTHERS, AND ACCEPTANCE OF ADULT VALUES HAVE BEEN STUDIED TO DETERMINE THEIR RELATIONSHIPS TO SCHOOL ACHIEVEMENT. INTERRELATIONSHIPS AMONG THESE VARIABLES WERE EXAMINED IN THIS STUDY. THE CALIFORNIA TEST OF MENTAL MATURITY WAS USED TO SELECT BRIGHT BOYS FROM GRADE 8, AND THE WECHSLER INTELLIGENCE SCALE FOR CHILDREN WAS USED TO CONFIRM SELECTION. THE 264 STUDENTS WERE INTERVIEWED AND TESTED WITH THE CALIFORNIA PSYCHOLOGICAL INVENTORY, BILLS INDEX OF ADJUSTMENT AND VALUES, AND A CARD SORT. GRADE POINT AVERAGES WERE OBTAINED AND THE IOWA TEST OF BASIC SKILLS WAS ADMINISTERED. THE HIGH AND LOW THIRDS OF THE GROUP WERE TESTED USING DUNN'S VISUAL DISCRIMINATION TASK, THEMATIC APPERCEPTION TEST AND MCCLELLAND'S PROJECTIVE TEST. RESULTS OF THE STUDY SHOWED THAT LOW ACHIEVERS DO NOT HAVE AS CLOSE TIES WITH HOME NOR DO THEY ACCEPT CONVENTIONAL VALUES AS MUCH AS DO HIGH ACHIEVERS. THE VARIOUS MEASURES TENDED TO CONFIRM EACH OTHER IN MEASUREMENT OF VARIABLES. FINDINGS CONFIRMED MANY FINDINGS OF EARLIER STUDIES OF NONINTELLECTIVE CHARACTERISTICS OF HIGH- AND LOW-ACHIEVING BRIGHT PUPILS. THIS CONFIRMATION SUGGESTS FUTURE RESEARCH SHOULD ATTEMPT TO MODIFY CERTAIN STUDENT CHARACTERISTICS BOTH IN THE LABORATORY AND IN THE FIELD. (AL)

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Cooperative Research Project No. S-035

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University of Wisconsin
Madison, Wisconsin

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TABLE OF CONTENTS

Page

List of Tables 3

The Problem 4

Objectives and Hypotheses 4

Related research 5

Procedures 9

- a. General design 9
- b. Sample 10
- c. Instrumentation 13

Analysis of Data and Findings 19

- a. Data collected from interview and tests administered to all subjects (high, average, and low achievers) 19
- b. Data collected from tests administered only to high- and low-achieving subjects 47

Conclusions and Implications 56

References 64

Bibliography 68

Appendices 73

- A. Distribution of Subjects by Schools 73
- B. Profile Sheet, California Psychological Inventory......... 74
- C. Bills IAV - "Self" Form 75
- D. Student Interview Questions 77
- E. Card-sort Items 80
- F. Sample Stimulus, Adaptation of Dunn's Visual Discrimination Task 84
- G. Answer Sheet, Dunn's Visual Discrimination Task 85
- G_1 Key to presentation, Dunn's Visual Discrimination Task.... 86

TABLE OF CONTENTS (Cont.)

Page

H. TAT Score Sheet... 87

I. TAT Scoring Key... 89

J. Interview Data, Previous Study............................ 91

K. Intercorrelations of Test Data, Total, High, Average, and Low Groups 99

L. Factor Matrix and Percent of Variances 128

M. CPI Table of Intercorrelations Among Variables........... 132

N. Comparison of Errors Made on Various Series in Adaptation of Dunn's Visual Discrimination Task (Within Presentations).................................... 134

O. Comparison of Effors Made on Various Series in Adaptation of Dunn's Visual Discrimination Task (Between Groups) 135

LIST OF TABLES

Table | Page

1. WISC, gpa, and ITSB Data for 262 Bright 8th-Grade Boys 11

2. Interview Data for High-, Average-, and Low-Achieving Bright 8th-Grade Boys 19

3. Summary of Interview Findings: Present and Previous Studies.. 31

4. Means, s.d.'s, andSignificance of Mean Differences for Cal. Psych. Inventory Variables of 261 Bright 8th-Grade Boys 34

5. Differences in Means, Cal. Psyc. Inventory of 261 Bright 8th-Grade Boys.. 35

6. Rotated Factor Matrices, Cal. Psych. Inventory (Varimax) 37

7. Bills IAV Self-Acceptance and Discrepancy Scores............. 40

8. Card Sort Variables for 261 Bright 8th-Grade Boys 41

9. Regression Equations, Maximum Contribution, used in Predicting ITSB, 7th gpa, 8th gpa, and Average gpa 44

10. Means and s.d.'s of errors for Adaptation of Dunn's Visual Discrimination Task, High- and Low-Achievers................. 47

11. Differences in Number of Errors Between First and Second Administration of Figure Sets, Dunn's Visual Discrimination Task 48

12. Correlations Between First and Second Administrations for Groups of Dunn's Visual Disc. Task, High- and Low-Achievers.... 49

13. Significant Mean Differences in Errors made on Dunn's Visual Discrimination Task 49

14. Mean Scors, Variances, Mean Differences, and Significance Tests for 10 Card TAT (High and Low Ss Only).................. 50

15. Means, S.d.'s and Critical Rations for 4-Card McClelland Type (School) Projective Task............................... 53

16. Summary of findings from Tests.............................. 55

Non-Intellective Variables Related to Academic Achievement of Bright Junior High School Boys

4. The Problem.

Because of their potential leadership and creative abilities, society is greatly interested in fostering high academic achievement of bright children. Some schools have gone to considerable lengths to identify them and to provide them with special educational programs or program modifications. In spite of counseling and other efforts, however, some bright children fail to achieve near their potentials. For example, some enter enriched or honors programs and are dropped because of failure to meet standards; others who would tend to qualify for such programs on most criteria are not recommended for such programs because of mediocre classroom performance.

In a previous study (Ringness (32) (33) (34)), certain non-intellective variables were identified as discriminators between bright junior high school boys who achieve highly in school and those who do not. A review of the literature on this problem has suggested other potential discriminators.

In order to confirm or negate previous findings, the present study is an attempt to partially replicate and extend the previous study. In contrast to the previous study in which matched groups of high- and low-achievers were employed, the full range of academic achievement of bright boys is employed. Certain additional techniques are utilized in the effort to further understand non-intellective variables which may be related to academic achievement.

This study does not investigate the problem of over- and under-achievement (39) in the general student population, but is aimed at describing differences between bright boys who achieve highly and those who do not. There is intent to attempt to identify variables which can either act positively to encourage high achievement, or which can act negatively. It is thought that variables so identified may be experimentally studied in further research.

5. Objectives and Hypotheses.

In a previous study it was found that goal orientation, father identification, pupil role acceptance, peer orientation, school relationships, achievement and affiliation motivations, and emotional adjustment as assessed by a variety of psychological instruments were related to school achievement.

The objectives of this study are to re-examine some of these personality variables, employing some new instruments, and with a different and extended sample of subjects.

Questions raised are:

1. Which of the instruments employed are useful in predicting academic achievement? (Can one, through testing, anticipate and perhaps work to prevent under-achievement? Can one better understand reasons for under-achievement by employing tests of non-intellective variables?)

2. What underlying factors may be found through analysis of data? (Are there certain generalities concerning high and low-achievers which are detectable in a number of ways? Do instruments confirm each other?)

3. Are certain previously untested variables (e.g. visual discrimination) useful in helping distinguish high- from low-achievers? (For example, if visual discrimination ability differentiates between high- and low-achievers, perhaps a test of visual discrimination may suggest remedial activities.)

No formal hypotheses are stated. The study is considered both a confirmatory and exploratory descriptive research.

6. Related Research.

Thorndike (39) has suggested that the concepts of "over-achievement" and "under-achievement" are essentially erroneous, and states that when a pupil does not achieve as expected, this is really a problem of inadequate prediction. That is, if one knew the pertinent variables related to achievement, level of achievement could be accurately predicted.

Intelligence, especially verbal intelligence, is an important factor in school achievement. Also important in prediction of achievement is the child's level of attainment at the beginning of any prediction study. Thus presumably the intelligence quotient and beginning level of attainment may be developed in the form of a regression statement, and will predict future achievement accurately except for experimental or test error, unknown factors which may subsequently intervene, and a residual related to personality, motivational, or other non-cognitive variables. There is a problem, however, which is not touched upon by Thorndike. That is, that the beginning level of attainment is affected by the same personality variables which affect prediction of future achievement.

Accordingly, it was felt that personality variables which might distinguish between high- and low-achievers should be studied. In this study, the concepts of "over-" and "under-achievement" are not relevant. The focus is upon high and low achievement, and factors which may relate to differences in achievement, given that each S presumably possesses the necessary ability or intelligence required for high achievement.

There are two meanings for "over-achievement" (38) which bear discussion at this point. One may consider that no one can "over-achieve", since he cannot do more than his abilities will permit. (The latter is a question in itself, since various factors may get in the way of the child's full utilization of his abilities or potentials). One can, however, "under-achieve", in that he may not be "working up to capacity".

There is another sense in which "over-achievement" has been used. Some children may be doing more quantity-wise than would be normally expected of them. They may be anxious, hence put more effort into school tasks than do most children. In so doing they may be slighting their rest, recreation, or other activities. In this sense, they may be "over-motivated", or even compulsive. Because they may be doing more work to attain high-achievement levels than would be normally the case, they may be designated as "over-achievers". Equally, lazy children or children who, because of emotional problems or other difficulties do less work than normally expected, may be designated as "under-achievers".

The present study is concerned with high and low achievers. Some of the high-achievers may be "over-achievers", but some may not. On the other hand, low-achievers may be usually considered "under-achievers", when the factor of intelligence is equated in the data. (It is true, however, that such partialling-out of intelligence is not undertaken in this study, so some low-achievers may be slightly less intellectually able than others.)

The term "average" achievers, as used here, refers to a middle group. They are average for this study. There is no normative connotation implied.

It is probable that because high-achievers represent different kinds of personality attributes (as do low-achievers) it has not yet been possible to attain consistent results in studies of factors related to achievement.

Adjustment and achievement.

Studies of Bledsoe (4), Boyd (6), Frankel (15), and Ringness (32) found relatively small or no differences in adjustment between high- and low-achieving subjects of comparable mental abilities. However, Pierce and Bowman (30) found differences in scores on the California Psychological Inventory favoring high-achievers. Goodstein et al. (17) suggests that there is no consistency between achievement and measures of adjustment. Hoyt (22) and Taylor (38) suggest that poor adjustment may produce either "over-" or "under-achieving" pupils since some anxious pupils may assuage their anxiety and gain security through achieving well, but others may be unable to make such "constructive" use of the motivation produced by anxiety.

It is suggested that some high-achieving pupils are indeed anxious, and perhaps may be a bit compulsive. Most high-achieving pupils may be expected, however, to have good emotional adjustment, whereas many low-achievers may have poor adjustment. It can be argued that persons in good mental health have the prerequisites for such learning attributes as adequate attention span, realistic level of aspiration, ability to focus attention on environmental as opposed to inner problems, freedom for creative effort, and others. The low-achiever fears failure, but employs defense mechanisms such as denial of inadequacy, rejection of school or adult values, and flight into activities or relationships apart from the school.

In complementary relationships, high achievement may induce feelings of competency, social and material reward, reduction in fear of possible failure, and other mental health-inducing variables. But low achievement brings with it negative evaluation by others, feelings of inadequacy, threat to self-concept or ego, and similar poor mental health-inducing variables.

The research to date has been controversial. The notion stated above offers a presumption which may be tested.

Achievement motivation.

Pierce (29), Pierce and Bowman (30), and Ringness (32) found high-achievers to state more motive-to-achieve academically than low-achievers. It has also been found that lower-achievers were less realistic and less decisive about educational and occupational goals (Graff (19), Todd (40); although this finding too, is contradicted by several studies (Morgan (26), Rust (36)).

It is quite obvious that, although low-achievers may verbalize motives and plans, they do not carry out efforts which satisfy such motives or or needs.

The nature of the motive-to-achieve has been discussed by McClelland (24) and others. Some have hypothesized that it is a basic motive, whereas others consider it a learned motive. This research is concerned with the question of whether motive-to-achieve is a seperate and distinct motive as related to achievement in the academic setting; there is a possibility that it may be a reflection of acceptance of adult and school values, and, in a sense, a reflection of conformity or even dependency.

Affiliation motivation.

A number of studies suggest that lower-achievers are more interested in peer relationships, heterosexual relationships, and in social activities than are high-achievers. The lower-achiever is seen to lean more upon the affection of the group, and may find social activity and success a substitute (and escape) for poor academic achievement. One study found that high-achievers were more independent than low-achievers (38). Another study (32) found, however, that low-achievers were more mature in heterosexual interests. The conclusion that higher-achievers are more family-oriented (32) and do more things with their families may be related to the finding concerning heterosexuality; that is, high-achievers have less opportunity for dating or other boy-girl relationships, and perhaps less interest in them, due to family relationships.

Taylor (38) finds "over-achievers" to be independent, leaderlike, responsible, and dependable, i.e. to show maturity; whereas the "under-achiever" tends to operate on impulse and to be easily influenced. He concurs that the "under-achiever" seeks to identify with a group from which he gains support and reinforcement; whereas the "over-achiever" gains satisfaction from scholastic success, but may give up a certain amount of creativity and originality by conforming to the requirements of instructors in order to attain high marks.

Self-esteem and security.

Taylor (38) suggests that "under-achievers" are derogatory to themselves and unrealistic in self attitudes; therefore more likely to have conflict in dealings with others. The "under-achiever" may be overly critical of others, and act aggressively or rebelliously, or else engage in withdrawing behavior. The "over-achiever" has positive feelings about self and others, feels accepted by others, and views himself as efficient, persistent, and adequate. This was confirmed by the work of Walsh (41).

Brookover (7), in an interesting study of self-concept of ability as related to school achievement, found that pupils possessed both general concepts of self and abilities and specific concepts of their abilities in certain school subjects. When he partialled out intelligence, he found that both the general, over-all self-concept of ability and the various specific concepts of ability in various school subjects to be related significantly to school achievement. Specific concepts varied with school subjects and might be different from the over-all estimate of own ability. In effect, a student who thought he had high abilities tended to achieve better than the student who felt he had less ability, whether such estimates were realistic or not when actual ability was measured.

The variables of self acceptance and acceptance of others are generally regarded as factors in adjustment or mental health. Thus there should be some inter-relationships between data concerning these variables and other mental health data.

Acceptance of adult values.

Lower-achievers provide more problem behavior for parents and school personnel (Frankel (15), Gowan (18), and Ringness (32)). They are less likely to accept school values (32). They are more negative to school and tend to reject teachers' "model-pupil" role definitions, and may consider higher-achievers as "squares".

Families of high-achievers are found by Morrow (26), Pierce (29), and the Portland Public Schools (31) to be less authoritarian, more permissive, and more supportive than those of lower-achievers. Drews (11), however, suggests that domineering mothers tend to foster high pupil achievement. Thus it would seem that in order to foster high achievement, parents must be democratic and supportive, yet provide sufficient motivation to achieve.

Lower-achievers, in rebellion against school authority, may be transferring rebellion against adult authority from the parents to the school. Taylor (38) bears this out, finding that the "over-achiever" accepts regulations and controls with little conflict, but that the "under-achiever" resists imposed tasks; this is seen as a reaction against his parents.

Bandura and Walters (1) have discussed aggressive male adolescents and find that home values and procedures tend to produce this kind of behavior. In another publication (2), they discuss the acceptability of adults as models by their children, and support the general notion that high-achieving parents may produce high-achieving children only if the latter accept them as models.

Related factors.

More bright children tend to under-achieve than do average or dull (39). A number of factors enter into this: it is clear that peer values may be geared more to the achievement of average children than to that of the bright, and that teaching and academic tasks may also favor the average child. The dull child, striving to maintain status with adults and peers, is likely to conform well and to work up to his potential. Further, less attainment is expected of him.

Bright children, unless stimulated by school tasks and the teacher, easily become bored, and, if socially-minded, may fail to see the importance of their school work (which they may term "Mickey Mouse" or "busy work"). It has also been remarked that teachers fail to recognize the level of potential bright students, hence fail to expect enough from them. Further, bright students have more opportunity to "under-achieve" than others, since their potentials give them "further to fall".

Studies of teachers' marks have shown that grades do not reflect a true picture of what may actually be attained by the child if standardized tests are used as criteria of achievement (9). Thus, boys may be "short-changed", since the teacher may appreciate the behaviors of girls in the classroom more than that of the boys. It might be expected that the more aggressive boys, in turn, would receive poorer teachers' marks in comparison with standardized test data.

Low achievement, in comparison to ability can be detected as early as first grade (37) and tends to increase with succeeding grades. Statistical significance of the discrepancy can be detected for boys at third grade age. For girls, a drop in achievement becomes noticeable at sixth grade, with statistical significance being attained at grade nine. There are a number of possible reasons for this, including the fact that schools may be geared more closely to the feminine role, and boys may lack a male identifying figure in the earlier grades since fathers are away much of the time and most teachers in the lower grades are females. It may also be considered that the younger children are more dependent upon their parents, hence are more conforming and amenable to the demands of adults. In pre-adolescence and adolescence, however, children may identify more with the peer group, may rebel against authority, and may find fewer rewards in conforming to adult precepts. There is thought to be a dependency-independency conflict in adolescence, which may also be a factor in school achievement.

Summary.

A number of personality variables, including adjustment, motive-to-achieve, motive-to-affiliate, acceptance of self and others, acceptance of adult values, have been studied to note their relationships to school achievement. Results have not been entirely consistent among the various studies reported. However, it is probably the weight of consensus that the lower-achieving boy is a less adequate person than the higher-achieving boy. A number of possible causal factors have been discussed.

It is the purpose of the present study to attempt to confirm or refute such relationships and to examine inter-relationships among the personality variables being studied.

7. Procedures.

a. General design.

A main sample of bright eigth grade junior high school boys was selected on the basis of California Test of Mental Maturity scores and tested with the Wechsler Intelligence Scale for Children to confirm that they met criteria for selection in the study. The finally-selected Ss were interviewed, tested with the California Psychological Inventory (19), Bills Index of Adjustment and Values (3), and an especially devised card sort. Seventh- and 8th-grade point averages, based only on academic subjects, were obtained. The Iowa Test of Basic Skills was administered to part of the sample by the researchers, and was routinely administered by the schools for the balance of the sample.

The sample was divided into three groups, representing the highest, average, and lowest achievers. The highest and lowest achievers were further tested with 10 cards from the Thematic Apperception Test (27), a screen-projected 4-card projective test, and an adaptation of Dunn's visual discrimination task (12).

Results were analyzed statistically by correlational, factor analytic, regressional, and other techniques.

b. The sample.

A random sample of 310 eighth-grade junior high school boys was drawn from the public school population of the cities of Madison and Janesville, Wisconsin. Subjects were intended to meet the following criteria:

1. California Mental Maturity Test IQ 120 or above.
2. Normal eighth-grade age.
3. Neither accelerated nor retarded in grade.
4. No incapacitating physical defects or gross emotional disturbance (i.e. suggesting residential treatment or education in a room for emotionally disturbed or handicapped).
5. * Upper-middle-class families.
6. Normal, comparable class loads.
7. * Same or similar schools.

The initial sample was tested with the Weschsler Intelligence Scale for Children (WISC) and a cut-off base of IQ 116 was employed for final selection. The use of IQ 116 was defended on the basis that the WISC has a standard error, Full Scale, of 4.00 and that some testing was saved by accepting Ss on this basis. Attrition of the initial sample occurred because approximately 41 boys failed to meet the confirmatory criterion (WISC), 7 boys moved from the cities involved in the study, or were otherwise unavailable for the study.

A final total sample consisted of 264 boys. Distribution of the sample, by the schools, is shown in Appendix A.

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* Socio-economic class could not be held constant, nor could similarity of schools, as was effected in the previous study. The available population of bright boys did not permit these controls. Neither city contains deprived areas, however, and school curricula and staff qualifications were comparable. Hence, the sample consisted of a random group meeting the IQ, age, class load, and fitness criteria, and could be considered representative of the children in general in both cities.

Seventh-grade grade-point averages (gpa) for the spring semester, 1964, based only on academic subjects (as opposed to physical education, art or shop courses) were obtained. Eighth-grade gpa's were obtained for the fall semester, 1964. The Iowa Test of Basic Skills (ITBS) was routinely administered to all 8th-grade boys in the city of Madison and was especially administered to Ss in the city of Janesville.

Seventh-grade gpa's, 8th-grade gpa's, and ITBS scores were placed in respective rank orders. A composite ranking was determined for each S, using equal weight for each variable. Composite ranking was employed, since teachers' marks do not correspond well with standardized tests of achievement and it was felt that multiple criteria for achievement should therefore be employed.

The sample was divided into a high-achievement group of 88 Ss, an average-achievement group of 88 Ss, and a low-achievement group of 88 Ss. (It should be noted that, originally, the groups were equal in size, but that 2 average Ss dropped from the study after much data had been collected and it was not possible to replace them. Later, near the end of the study, missing data caused one more average S to be dropped, so that the average-achievement group ended at 85 subjects.

Table 1 shows WISC, gpa, and Iowa test data for the sample as a whole and for the sub-samples.

TABLE 1

WISC, gpa, AND ITSB DATA FOR 262 BRIGHT 8th-GRADE BOYS

	Total Sample	High Group	Average Group	Low Group
N	262	88	86	88
WISC Full Scale				
Mean	127.75	131.25	127.74	124.34
S.d.	7.44	7.82	6.87	5.87
Range	116-150	116-150	117-142	116-140
WISC Verbal Scale				
Mean	130.10	135.12	131.25	124.12
S.d.	9.34	8.14	8.01	8.28
Range	99-155	118-155	118-154	99-145
WISC Performance Scale				
Mean	119.99	121.25	118.57	120.10
S.d.	8.91	9.87	8.67	8.02
Range	97-142	103-142	101-140	97-138
IOWA Test Basic Skills				
Mean	122.67	133.24	123.79	111.30
S.d.	11.46	6.31	5.38	8.76
Range	77-146	115-46	104-136	77-128

	Total Sample	High Group	Average Group	Low Group
N	262	88	86	88
7th-Grade gpa				
Mean	2.81	3.53	2.87	2.05
S.d.	.77	.38	.37	.60
Range	.67-4.00	2.50-4.00	2.00-3.67	.67-3.33
8th-Grade gpa				
Mean	2.69	3.36	2.79	1.93
S.d.	.74	.37	.31	.59
Range	.50-4.00	2.50-4.00	2.00-3.50	.50-3.00
Average gpa (7th & 8th)				
Mean	2.76	3.42	2.84	1.99
S.d.	.76	.46	.23	.70
Range	.71-4.00	2.84-4.00	2.13-3.59	.71-2.92
M (Full Scale)				
M Hi- M Av	3.51	T = 3.162	.01%	
M Hi- M Lo	6.91	T = 6.644	.01%	
M Av- M Lo	3.40	T = 3.505	.01%	
M (Verbal)				
M Hi- M Av	3.87	T = 3.172	.01%	
M Hi- M Lo	11.00	T = 8.943	.01%	
M Av- M Lo	7.13	T = 5.797	.01%	
M (Performance)				
M Hi- M Av	2.68	T = 2.015	.05%	
M Hi- M Lo	1.15	T = .311	NS %	
M Av- M Lo	-2.53	T = 2.073	.05%	
M (Iowa)				
M Hi- M Av	9.44	T = 18.851	.01%	
M Hi- M Lo	21.94	T = 19.078	.01%	
M Av- M Lo	12.49	T = 11.459	.01%	
M (7th gpa)				
M Hi- M Av	.66	T = 11.786	.01%	
M Hi- M Lo	1.48	T = 19.733	.01%	
M Av- M Lo	.82	T = 10.933	.01%	
M (8th gpa)				
M Hi- M Av	.57	T = 10.962	.01%	
M Hi- M Lo	1.43	T = 19.066	.01%	
M Av- M Lo	.86	T = 11.467	.01%	
M (Average gpa)				
M Hi- M Av	.58	T = 10.545	.01%	
M Hi- M Lo	1.43	T = 17.228	.01%	
M Av- M Lo	.85	T = 7.083	.01%	

Ferguson, formula 10.11, 10.12 (14).

It is apparent that there is a statistically significant difference in WISC Full Scale and Verbal IQ between the high, average, and low-achievers. However, mean differences between high- and average-achievers, Full Scale IQ were 3.51, and between average- and low-achievers were 3.40, although the difference between high- and low-achievers was 6.9 IQ points. Since the standard error of the WISC is 4.0, it may be assumed that these differences, although statistically significant, may not be psychologically so. However, certain regression techniques were employed in order to assess the effect of IQ differences on achievement. It should also be stated that IQ differences in this rather attenuated range of intelligence were not presumed to be related to personality variables. Co-variance techniques were not employed because of the nature of personality test data.

Performance Scale IQ's were significant for differences between high and average, and low and average achievers, and not significant between high and low achievers. The average sample had the lowest mean Performance Scale scores of any of the groups.

Ranges of IQ scores were great, with the largest range and standard deviation occurring in the high achievement group in regard to Full Scale WISC scores. The largest range on the Verbal Scale and Performance Scale occurred in the low achievement sample, suggesting that this group was less homogeneous in character of mental ability than the other groups.

Ranges on the ITBS, and both gpa's were largest for low-achievers. The standard deviations for these variables were also largest for this group.

c. Instrumentation.

The entire sample was administered the California Psychological Inventory (CPI) (19); the Bills Index of Adjustment and Values (IAV) (3); an interview, and an especially-constructed card-sort of motivational variables. The highest and lowest groups were additionally administered an adaptation of Dunn's visual discrimination task (12); ten selected Thematic Apperception Test (TAT) (27) cards; and four of McClelland's (24) projective test slides, optically projected.

California Psychological Inventory. The CPI is a self-report device in which 480 items yield 18 standard scores. Many of the items were originally contained in the Minnesota Multiphasic Personality Inventory (21). An extensive body of research is listed in the Manual.

Scores for Dominance, Capacity for Status, Sociability, Social Presence, Self-Acceptance, Well-being, Responsibility, Socialization, Self-Control, Tolerance, Good Impression, Communality, Achievement via Conformity, Achievement via Independence, Intellectual Efficiency, Psychological Mindedness, Flexibility, and Femininity are provided. The instrument may be used in counseling, whereby an individual profile is supplied for the subject, and the examiner is expected to take into account the interaction of various scales (see Appendix B). For research purposes the scales were treated without regard to their possible value in concert.

The CPI provides means of judging for "fake bad" or randomness of answers. Test-retest correlations for the sub-scales, based upon high school male samples, range from .44 for the Communality scale to .77 on the Intellectual Efficiency scale. Cross-validational studies were employed to ascertain validity.

In its use in this study, intercorrelations were computed among the scales and an image factor analysis with rotated vectors was obtained. Scales were also correlated with other data, and means, standard deviations, and significance test data will be presented.

Bills Index of Adjustment and Values. The "self" form of the IAV for grades 6, 7, and 8 was administered. This instrument provides three scales: Scale I purports to assess S's perceived self; Scale II purports to assess S's feeling about being as he perceives himself and seems to be essentially an estimate of self-acceptance; Scale III purports to assess S's ideal self.

As used in this study, discrepancies were obtained between Scales I and III, and the total discrepancy between these scales was analyzed and compared among the groups. Scores for Scale II were also analyzed. In a sense these are two estimates of the same variable (Self Acceptance), in that the discrepancy between perceived and ideal self is thought related self acceptance; it should be noted that a high score on Scale II should be accompanied by a low discrepancy score if this relationship is to hold.

Bills reports research by himself and others attesting to content and concurrent validity. Construct validity and experimental validation are also discussed. Both test-retest and split-half reliabilities are reported. Six weeks test-retest reliability is reported at .90, .83, and .92 for the Scales I, II, and III respectively, and as .87 for discrepancies. Appendix C shows the form of the IAV used.

Student interview. The student interview was developed by Edwards and Wilson (14) and modified for purposes of this study. It consists of 55 questions tapping areas of occupational ambitions, identification with father, school identification, teacher identification, peer relations, attitude toward school marks, out-of-school activities, and attitude towards boy-girl relationships (see Appendix D).

In use in this study, Ss were individually interviewed by a project assistant in privacy. Before questions were asked, a period for gaining rapport and confidence of the Ss was employed. Ss were assured of complete confidentiality of answers and were assured that they need not answer questions if they preferred not to. Answers were written in S's presences. (The examiner is an advanced Ph.D. candidate in School Psychology).

Reliability and validity are not known. Maximum comparability of results was obtained by having only one examiner. When answers were not clear, Ss were asked to elaborate.

Card-sort. Items of the card-sort (Appendix E) represented presumed dimensions of pupil self-perception concerning non-conforming behavior, independent behavior, affiliation motivation, and achievement motivation. The card-sort was based on a previous study (32), with additional items added to differentiate more clearly between non-conforming and independent behavior (or rebelliousness vs autonomy). Content validity for new items was judged by M.S. and Ph.D. candidates in School Psychology.

The card-sort consists of 80 items (20 per dimension) which are sorted by Ss equally into ten compartments in an especially prepared plastic box. Items "most like me" are placed in box #1 with items "least like me" in box #10. Ss sorted privately at the same sitting as the interview. Thus one S would be sorting while another was being interviewed. Sorts were immediately recorded on answer sheets.

As with other self report devices of this kind it is difficult to ascertain true reliability; a random sample of 10 Ss was drawn and an odd-even correlation for each dimension of their sorts was calculated. Internal consistency coefficients ranged from .51 for independence, through .71 for affiliation motive, .85 for achievement motive, and .93 for non-conformity, as stepped up by the Spearman-Brown formula.

Wechsler Intelligence Scale for Children. Since the WISC is so well known it will not be further described. All testing was done by licensed psychometrists or school psychometrists, with the exception of 12 tests given under supervision by psychometrists-in-training.

Iowa Test of Basic Skills. The ITBS is also well known and will not be described. It was administered routinely by the Madison city schools to all eighth-grade pupils in September, 1964, and by the Janesville pupic schools' psychologist in August, 1964.

Dunn's visual discrimination task. The adaptation of this task, based on the work of Dunn (12), was employed only for high and low-achiever Ss.

Dunn postulated that when similar silhouettes of human figures are presented tachistocopically, poses which are threatening to Ss will be less well-discriminated as to likeness, or likeness than will less threatening figures. Dunn's own work was with schizophrenics. He states (12, p.50) that "hypothesis is therefore advanced that deficits in schizophrenic performance will be increased by the introduction of properties into the stimulus materials which symbolize those areas of emotional disturbance typically associated with the schizophrenic process but which properties are inconsequential to the performance of the task itself." Thus when schizophrenic Ss are presented with a task in which stimuli presented pose threat, performance decrements may be expected over tasks in which stimuli are non-threatening.

Previous study (32) suggested that low-achieving Ss might have more difficulty and find more anxiety in punitive adult relations than might high-achieving Ss. Further, low-achieving Ss might have more difficulty with male than with female adult figures. It was the notion, therefore, that in a visual discrimination task, low-achieving Ss might discriminate less well than high-achieving Ss tachistocopic series including male or threatening figures, but there should be no difference between groups of Ss in dealing with nurturing, female, or neutral stimuli.

Accordingly, a number of 2"x 2" transparencies were developed, employing human models against a white background. These transparancies were produced by the University of Wisconsin Photolaboratory.

Five series of silhouettes were developed, and duplicated so that Ss might attempt each discrimination task twice, as will be described. Each series consisted of a base (or "key") figure, and five variations of the base figure.

The first series consisted of a presumed neutral situation of a house and a tree, in which it was possible to vary the angle of a limb from the base figure in 15-degree steps for variants. The second series consisted of a threatening male figure, employing live models of a seated boy and standing father in which the father had raised his arm as if to deliver a blow and the boy had raised his arms as if defending himself. Movements of the father toward the boy varied in 15-degree steps over the series of 5 variants from the base position. The third set, similarly constructed, consisted of male nurturance, in which the boy reached for a cup offered by the adult male. The fourth set consisted of a female threatening figure in a pose similar to that of the male, and the fifth series consisted of a similar female nurturing figure. (See Appendix F).

Ss were placed at tables in a darkened room, with pencils and answer sheets (Appendix G). Directions to mark the appropriate S (same) or D (different), as the testor called out item numbers, were given.

Each series was presented twice. The neutral Series I was presented first. The basic stimulus was followed by a variation. The basic stimulus was presented a second time, followed by a second variation. Similarly, the basic stimulus was presented and followed respectively by the third, fourth, and fifth variations. Thus five comparisons were made by Ss between the base stimulus and its respective variants. Ss were then directed to the next series. All series were presented in the order shown in Appendix G; all were represented in the order shown in Appendix G.

A pilot study showed that tachistoscopic exposure of ½ second was most feasible; with more than this exposure, few errors were noted and with less exposure, Ss were unable to answer correctly.

A KS275 Lafayette Instrument Company automatic tachistoscope, ANSCO model 1295 (22) was employed. Exposure for each stimulus was at ½ second, with 1 second between exposures.

In the first run, the neutral house-tree series was presented in the order of 5th variation, 2nd variation, 3rd, 1st and 4th variation. The second, third, fourth, and fifth series were presented in the first run in the order of 1st, 2nd, 3rd, 4th and 5th variations.

In the second run, the neutral stimuli were presented as before, permitting some estimate of reliability. However, the second series was ordered 5,3,2,1,4; the third series was ordered 3,2,1,5,4; the fourth series was ordered 4,1,2,3,5; and the fifth series was ordered 2,5,1,3,4. The purpose of this variation was to determine whether random order of variations produced more discrimination errors than presentation in order of degree of variation (first run).

In the first run of five series, the neutral, male threatening, male nurturing, female threatening, and female nurturing series were presented in that order. In the second run, the neutral series was followed in order by male threatening, male nurturing, female nurturning, and female threatening series.

Ss responded to this task in groups, meeting at each school. The size of the group depended upon the sampling, since more Ss were obtained from some schools than from others. Not all Ss were able to appear for this task. Ss received identical administrations, since availability of Ss was such that they could not be handled individually. This meant that randomization from S to S could not be employed. No training period was provided, contrary to the work of Dunn, since these Ss were considered (as "bright" boys) to be capable of comprehending directions and proceeding without training, which proved to be the case.

Thematic Apperception Test. The TAT was administered only to high and low-achiever Ss. Cards 1, 3BM, 6BM, 7BM, 8BM, 9BM, 12M, 13B, 14, and 17BM were administered individually by the project assistant. The usual standard directions were given. Instead of manual recording of protocols, Ss responses were record on a tape recorder, which may have induced more comprehensive or longer stories. Transcripts were then typewritten from the tapes.

A second School Psychology candidate then interpreted the themes according to observed presence or absence of self-esteem, security, perservering behavior, withdrawing behavior, aggressiveness, frustration, conflict, anxiety, guilt, acceptance of adult values, identification with parent, and heterosexual interests. Interpretations were recorded on an answer sheet (Appendix H). Reliability of scoring was introduced by development of a key for interpretation of stories (Appendix I), and by frequent spot-checking and comparison of interpretations. Based on a sample of 10 protocols, inter-rater reliability is .86.

McClelland projective task. Des Charmes adaptation of McClelland's task (24) was employed. It consists of four transparencies (as used here) projected on a screen for five minutes each. The task is similar to the TAT in intent and directions given. Ss wrote their own protocols; a group presentation was made after the presentation of Dunn's task (see above).

The pictures presented are those of school situations. The first picture presented shows junior or senior high school boys around some tables, with one boy writing and another looking over his shoulder. It can be interpreted as cheating, mutual study, or in other ways. The second picture shows a man and four boys in discussion. This could represent a coach and some players, a counselor and students, a disciplinarian and culprits, or other. The third picture is of boys employing microscopes in a science room, and the fourth picture shows boys grouped about science equipment which is on a table.

Protocols were scored for evidence of needs for exhibition, affiliation, guilt or abasement, aggression, succorance, nurturance, endurance, dominance, autonomy, as defined by Edwards (13), and for evidence of acceptance of school and adult values, social outcomes, anti-social outcomes, punishment, and censure. Re-rating was employed in random fashion with 25 protocols to attempt to insure reliability.

Time of administration. Initial clearance from the public schools was gained in time to inspect school office files for possible subjects in February, 1964. After determining the population of Ss fitting criteria, a random sample of 325 Ss was drawn. Letters were sent to parents for permission for their boys to appear in the study, and an initial sample of 310 Ss was thus obtained.

WISC testing began in March, 1964 and was continued through the summer and completed in November, 1964. At the same time, interviews and card sorting were taking place. The ITBS were administered in early fall, 1964. TAT, divisual discrimination, and McClelland test data were gathered during the spring semester, 1965, collection being completed by April 15. The CPI and IAV were administered between March 12 and April 26, 1965.

8. Analysis of Data and Findings.

Data Collected on All Subjects

Interview.

Table 2 shows information obtained from interview of all Ss in the study. Responses and chi-square tests of significance of differences are shown. Headings indicate general areas tapped by questions. Some Ss provided multiple responses; some responses were spoiled, accounting for inter-question differences in N's.

TABLE 2

INTERVIEW DATA FOR HIGH-, AVERAGE-, AND LOW-ACHIEVING BRIGHT 8th-GRADE BOYS
N= 261

Occupational Ambitions.	Tot	High	Aver	Low	H-A	H-L	A-L
N=	261	88	85	88			
1. Hoped-for occupation							
Literary and arts	12	1	6	5			
Law and politics	18	10	7	1		7.85	4.86*
Medical	29	7	11	11			
Social sciences	13	1	10	2	8.08		5.30
Biolog. sciences	16	4	6	6			
Natural sciences	23	16	5	2	6.27	12.13	
Engineering	43	17	12	14			
Agriculture	3	2	0	1			
Gen'l Profession.	8	4	1	3			
Air Pilot	8	0	5	3	5.27		
Architecture	13	3	5	5			
Technician	3	2	0	1			
Teaching (non-college)	14	6	3	5			
Prof. Athletics	8	3	4	1			
Public Servant	3	1	1	1			
Executive	4	2	0	2			
Not easy to classify (NEC)	8	2	2	4			
Don't know (DK)	29	4	9	16		8.12	
Skilled trade	10	0	3	7		7.29	
Unskilled	0	0	0	0			
2. Reasons for choice of occupation.							
Working with people	13	5	4	4			
Working with things	43	15	11	17			
Employing one's talents	37	23	4	10	15.31	6.30	
Being creative	24	6	12	6			
Income	17	7	6	4			
Security	3	1	2	0			
Moral (helping others)	20	4	10	6			
Independence(own boss)	3	0	0	3			
Adventure, interest	49	9	25	15	9.82		
NEC	20	11	5	4			
DK	34	7	11	16		4.05	
No answer (NA)	8	2	0	6			6.07

Note: * chi-square significant at 5% level.

Occupational Ambitions.	Tot.	High	Aver	Low	H-A	H-L	A-L
3. Source of occupational aspiration.							
Father, mother	50	14	20	16			
School, teacher	40	19	13	8		5.29	
Other adult	31	11	10	10			
Peer	2	2	0	0			
Books, reading	30	7	11	12			
TV	11	4	3	4			
NEC	50	15	21	14			
Don't know	35	10	12	13			
No answer	13	7	0	6	7.13		6.07
4. Quality of occupational information.							
Accurate, definite	42	16	8	18			4.26
Acquainted, fuzzy	177	59	67	51			7.93
Don't know, no answer	42	12	11	19			
5. Personal experience with occupation-like duties.							
Considerable, relevant	3	2	0	1			
Considerable, remote	4	4	0	0	4.00	4.09	
Some	79	26	23	30			
Very little, none	137	45	54	38			6.71
Don't know, no answer	39	11	9	19			3.99
6. Role model.							
Father	39	13	13	13			
Uncle, other relative	14	9	1	4	6.60		
Teacher	3	1	2	0			
Adult, acquainted	78	17	33	28	7.71		
None	90	34	30	26			
NEC	9	7	0	2	7.13		
No Answer	9	3	0	6			6.07
Don't know	23	4	9	10			
7. Discussant about occupational choice.							
Parents	115	31	40	34			
Teacher	21	9	6	6			
Other adult	22	5	8	9			
None	84	34	25	25			
No answer, Don't know	36	11	10	15			
8., 9. combined. Certainty of job choice.							
Positive	16	10	2	4	5.53		
Fairly sure would like	114	40	33	41			
Uncertain	95	29	40	26			5.40
No answer, don't know	34	8	9	17			

Occupational Ambitions.	Tot	High	Aver	Low	H-A	H-L	A-L
10. Plans for preparation for occupation.							
Realistic	111	34	33	44			
Vague	73	35	26	12		15.36	7.01
Unrealistic	16	3	6	7			
None, DK, NA	61	15	21	25			
11. Reasons, if not expecting to attain occupational choice.							
Ability	18	3	7	8			
Money	0						
May change choice	10	4	5	1			
NEC	5	2	1	2			
DK, NA, not applicable	231	79	73	79			
Identification with Father.							
12. Father's Occupation.							
Executive	23	6	13	4			5.51
Literature, Arts	4	2	2	0			
Law, politics	5	3	2	0			
Medical	17	7	4	6			
Engineering	17	3	7	7			
Gen'l profession	17	8	4	5			
Teaching, college	28	14	11	3		7.87	5.17
Teaching, public sch.	4	2	0	2			
Educ. administration	7	2	3	2			
Contractor	3	1	1	1			
Broker	0						
Business (Owners)	11	5	2	4			
Merchant	2	1	1	0			
Craftsman	0						
Pilot	2	0	2	0			
Salesman	25	10	7	8			
Public servant	21	6	6	9			
Clergy	1	0	1	0			
Unskilled	22	3	3	16		9.97	9.97
Skilled	26	10	4	12			4.21
NEC	11	2	6	3			
NA, DK	14	3	6	5			
13. Extent father discusses his work at home.							
Frequently	161	55	52	54			
Sometimes	42	13	17	12			
Rarely	44	16	11	17			
NA, DK	15	4	6	5			

	Tot	High	Aver	Low	H-A	H-L	A-L
14. Occupational counseling of father with S.							
Frequently	66	18	24	24			
Sometimes	34	12	13	9			
Rarely	146	53	43	50			
NA, DK	16	5	6	5			
15, 16, 17. Frequency of father-son activities.							
Week-ends or oftener	203	66	66	71			
2 or 3 times/month	27	10	9	8			
Once per month or less	11	7	3	1		4.71	
Never	6	1	2	3			
NA, DK	15	4	6	5			
18. Omitted.							
19. Father's education.							
Some elementary sch.	3	1	0	2			
Element. graduate	7	2	2	3			
Some high sch. tr.	5	0	0	5		5.15	5.15
High sch. grad.	70	20	19	31		13.34	14.74
Some college tr.	22	6	8	8			
College grad.	79	28	30	21			
Post-grad. tr.	54	27	19	8		12.87	5.61
DK, NA	22	4	8	10			
20, 21, 22. Attitude toward father.							
Strong admiration	138	47	42	49			
Admire with reserv.	80	29	27	24			
Not close	21	5	9	7			
Desire to be diff.	2	1	0	1			
Strong negative	3	0	2	1			
DK, NA	18	6	6	6			
School Identification.							
23, 24. Subject most liked (academic)							
Science	69	26	20	23			
Arithmetic	107	35	40	32			
Spelling	1	1	0	0			
English	14	5	3	6			
Literature	0						
Social studies	69	21	23	25			
Foreign lang.	2	1	0	1			
None	6	3	2	1			

Occupational ambitions.	Tot	High	Aver	Low	H-A	H-L	A-L
Subject most liked (non-academic)							
Physical educ.	79	14	31	34	9.20	11.46	
Art	21	5	11	5			
Music	9	2	5	2			
Band	20	4	9	7			
Shop	42	6	12	24		13.09	4.70
None	81	53	19	9	26.07	48.21	4.53
DK	12	6	0	6	6.07		6.07
25, 26. Subject least liked (academic).							
Science	15	6	3	6			
Arithmetic	38	10	10	18			
Spelling	2	1	0	1			
English	109	38	36	35			
Literature	1	0	0	1			
Social studies	50	10	20	20	4.02	4.02	
Foreign language	16	7	5	4			
None	30	14	12	4		6.19	4.61
DK, NA	1	1	0	0			
Subject least liked (non-academic).							
Physical education	22	4	12	6	4.60		
Art	15	5	5	5			
Music	95	16	33	46	8.76	22.42	
Band	1	0	1	0			
Shop	6	0	1	5		5.15	
None	108	55	34	19	9.18	30.22	6.61
NA, DK	14	7	0	7	7.13		7.13
27-30. Values of school.							
Not too important	10	5	3	2			
Occupational prep.	215	58	75	82	10.96	20.11	
Develop talents	20	17	2	1	12.91	15.84	
Intrinsic subj. int.	19	8	8	3			
DK, NA	2	1	1	0			
31. Value of school for future job.							
Important	156	51	52	53			
Somewhat	43	18	14	11			
Little or none	33	12	11	10			
DK, NA, NEC	29	6	9	14			

	Tot	High	Aver	Low	H-A	H-L	A-L
Identification with Teacher.							
32,33. Perceived teacher norms for pupils.							
Conformity	222	79	66	77	5.32		
Social competence	25	2	14	9	10.22	4.75	
Academic competence	50	22	14	14			
Intell. liveliness	20	1	12	9	10.34	4.71	
DK, NEC, NA	5	1	1	3			
34. Attitude of S toward teacher norms for pupils.							
Approve	223	76	72	75			
Indifferent	21	3	9	9			
Dislike	8	2	3	3			
NEC, DK, NA	10	7	2	1			
35. Characterization of self as like model.							
Much like model	196	81	54	61	21.41	14.58	
Little like model	15	0	9	6	9.71	6.21	
Unlike model	28	6	11	11			
DK, NA, NEC	9	1	1	7			
Try to be	13	0	10	3	10.86		4.25
36,37. Teacher opinion of S as seen by S.							
Good, cares	128	55	40	33	4.49	11.00	
Indifferent, cares	70	19	22	29			
Negative, cares	25	6	8	11			
Good, doesn't care	4	0	1	3			
Indiff., doesn't care	6	2	2	2			
Negative, doesn't care	5	0	2	3			
DK, NA, NEC	26	8	11	7			
38-40. Attributes of favorite teacher.							
No favorite teacher	62	24	21	17			
Fair, impartial	18	8	4	6			
Cheerful, humor	74	24	24	26			
Athletic	5	2	3	0			
Academ. competence	46	14	12	20			
Kind, nice, underst.	72	23	21	28			
NEC, DK, NA	18	5	9	4			

	Tot	High	Aver	Low	H-A	H-L	A-L
Peer Relations.							
41,42. Characteristics of popular boys.							
Athletic	29	14	7	8			
Scholarship	8	5	0	3	5.03		
Personality	78	36	21	21	5.37	5.84	
Ath, pers.	62	20	25	17			
Scholar, pers.	33	6	9	18		6.95	
DK, NA, NEC	8	4	0	4	4.00		4.00
All three above	43	9	18	16			
Ath, scholar	12	2	5	5			
43. Peer's attitude toward "good" students.							
Admired	133	49	41	43			
Indifferent	28	8	12	8			
Depends on person	35	15	8	12			
Square, negative	58	13	22	23			
NEC	6	3	2	1			
DK	4	0	2	2			
44. *S*'s estimate of own popularity.							
Very popular	82	24	31	27			
Pretty popular	57	26	10	21	8.51		4.45
Average	87	26	34	27			
Not very	29	12	9	8			
Not popular	6	2	1	3			
DK	4	0	1	3			
NEC	1	1	0	0			
45. Characteristics of admired peer.							
Athletic	24	6	8	10			
Scholarship	58	26	12	20	6.19		
Personality	76	31	20	25			
Ath, schol, pers	71	29	22	20			
Family, soc. stat.	1	0	1	0			
No admired peer	12	2	6	4			
DK, NEC	16	5	5	6			
Scholar, pers.	37	15	10	12			
Athlet., pers.	11	3	3	5			
46. General peer attitude toward school tasks.							
Work hard as can	34	12	13	9			
A little more than nec.	54	18	21	15			
Enough to get by	163	55	47	61			3.97
NEC	9	3	3	3			
DK	2	0	2	0			

	Tot	High	Aver	Low	H-A	H-L	A-L
School Achievement and Attitudes.							
47. If school work is poor, who mentions this to S?							
Father	19	8	5	6			
Mother	27	7	12	8			
Both parents	76	24	32	20			4.35
Teacher	48	14	11	23			4.93
Teacher and parents	56	13	18	25		4.83	
Counselor	7	0	6	1	6.36		3.84
Other	11	6	3	2			
No one	23	13	3	7	6.63		
DK, NA, NEC	5	4	1	0		4.09	
48. Action taken by above.							
Urge, advise, reason	104	41	23	40	7.37		6.59
Verbal chastize	60	16	25	19			
Depriv. privileges	39	6	19	14	8.25		
Aid, help, tutor	20	4	9	7			
Does not apply	23	14	6	3		7.87	
NEC	3	2	0	1			
DK	15	5	4	6			
49. Results of action on S.							
Positive, motivates	117	47	33	37	3.96		
Temporary improvement	55	5	24	26	15.47	17.27	
Neutral	19	5	7	7			
Negative	23	4	11	8			
Does not apply	32	19	9	4	3.98	11.25	
DK, NA, NEC	15	7	2	6			
50. S's satisfaction with his marks.							
Very satisfied	97	51	29	17	10.28	27.70	4.64
Pretty satisfied	48	17	16	15			
So-so	58	11	27	20	9.09		
Not very	24	2	14	8	10.22		
Not at all	36	5	10	21		11.55	4.45
51. Source of poor marks.							
Self	147	35	51	61	6.36	15.49	
School	9	4	1	4			
DK	55	12	30	13	10.72		9.45
Does not apply	49	34	6	9	24.62	19.23	
NA, DK	5	4	0	1			

	Tot	High	Aver	Low	H-A	H-L	A-L
Leadership Activities.							
52. Leadership and membership, clubs and activities.							
Member, one club	80	30	25	25			
Member, two clubs	77	22	27	28			
Member, 3 clubs	47	18	16	13			
Member, 4 clubs	27	7	12	8			
Member, 5 or more	3	2	1	0			
Member, no clubs	28	8	7	13			
Leadership in clubs	115	43	40	32			
No leadership "	105	29	38	38			
Not asked	2	0	0	2			
DK, NEC, NA	41	15	18	16			
53. Extra-school jobs.							
Yard work	168	56	56	56			
Caddy	13	6	3	4			
Baby-sit	47	11	21	15	4.11		
Paper-route	66	22	20	24			
Clerk in store	10	2	2	6			
Janitorial	5	3	1	1			
Other	60	10	26	24	9.44	7.14	
None	25	15	2	8			
54. Recreational preferences.							
Sports	244	78	82	84			
Hobbies	103	32	37	34			
Reading	59	28	20	11		9.52	
Hiking, bike riding	17	4	6	7			
Other	21	11	4	6			
Heterosexual relationships.							
55. Attitude toward boy-girl parties and dates.							
Like them	120	37	39	44			
Indifferent	48	19	13	16			
Dislike them	63	19	25	19			
Never had the experience	28	12	8	8			
DK, NA	1	0	0	1			

Reference is made to a previous study (32) in which many of the interview questions were used. The present study was intended in part to confirm or deny results of that previous study. Appendix J shows a tabulation of previous data. The interested reader is referred to a forthcoming publication (35) where certain tests of significance will be reported.

In comparing the two studies, it should be noted that there are population differences. The previous work was done in two privileged areas of Los Angeles of at least upper-middle-class families; the present study represents a cross-section of all areas in two Midwestern cities, and the full range of incomes. In addition, the present study deals with 8th-grade boys, whereas previous work was done with 9th-graders. Finally, in this study Ss were divided into high-, average-, and low-achievers, whereas two contrasting but matched groups of high- and low-achievers only were employed.

For these reasons the two studies are not directly comparable. The reader is invited to make his own inferences concerning the similarity and differences of the findings.

The area of occupational ambitions was chosen for study for several reasons. It was hoped that some idea of the occupational plans of Ss would provide clues to subject matter interests, attitudes, and achievement. It was also hoped to find some clues as to the maturity level of the Ss, and finally, to determine whether occupational plans and information were related to differences in school achievement at this age level.

Table 2 shows that the majority of Ss have at least some idea of a future vocation, and that the professional-managerial ambition is characteristic of approximately 3/4 of the Ss. This is realistic, since Ss are of high IQ and most are in a university community, hence have abilities for these vocations and also a better-than-average opportunity to acquire needed schooling. It is seen that the low group Ss are less interested in law and politics, and less decided upon a vocation than are other groups. High achieving Ss are more interested in the natural sciences than other groups; middle achieving Ss are more interested in vocations related to the social sciences. No high-achieving S showed interest in a skilled trade, although this interest was found in middle- and low-achieving Ss; this difference was also seen in regard to air-piloting. In a previous study, it was found, as here, that high-achieving Ss preferred law and politics more frequently than low-achievers. It was found previously that lower-achievers more frequently preferred engineering than did high-achievers, although this was not the case in the present study.

In regard to reasons for choice of occupation it is seen that high-achievers are more concerned than the others with employing their talents constructively. Average- and low-achievers more frequently mentioned interest and adventure connected with their occupational choices; they were also less frequently able to provide answers as to reasons for their choice. Few Ss mentioned income, security, or independence as important. Satisfaction in the work itself seemed more important to most Ss; this finding confirms that of the previous study.

Source of occupational aspiration varied widely, with high-achieving Ss apparently receiving more motivation from school materials and activities than low-achieving Ss. This also confirms the previous study. Similarly, the quality of occupational information was low in both studies, and the amount of experience with occupation-like duties was generally meagre. Role models varied widely, and, as in the previous study, either there was no role model, or an acquainted adult represented the model more frequently than did S's father. Parents, in both studies, were most frequent discussants about occupational choice, although in the present study 120 Ss, or nearly 50% had not discussed occupational choice with anyone. Eighth grade may be too early for such discussions, although important academic decisions are being made at this time which could conceivably influence future occupational opportunity. Certainty of job choice was greater for high-achieving Ss, average-achievers being least certain that their mentioned choice would be their final choice. In the previous study ¼ of the high-achievers were uncertain about occupational choice, whereas ½ of the low-achieving Ss were uncertain. In the previous study the total number of uncertain Ss was about 1/3 of the sample, whereas in the present study, ½ were uncertain; some certainty may be gained in the transition from 8th to 9th grade.

In this study 111 of 261 Ss seemed to have realistic plans, with little difference among groups; in the previous study 25 of 60 Ss were realistic, with high-achieving Ss more realistic than low-achievers.

The previous study suggested that low-achievers had less identification with their fathers; less time was spent with the father, less admiration was expressed for the father, and less paternal counseling was done. It has been stated that the samples in that and the present study are somewhat different in socio-economic status. This is shown by the listing of fathers' occupations. It is seen that approximately 2/3 of the present Ss had fathers in business or the professions. There were statistically significant differences, however, in regard to fathers in unskilled occupations, in that fathers of low-achieving Ss were more highly represented in this category. More high- and low-achievers had fathers in skilled occupations. More fathers in the high- and average-achieving families were college professors. This may be contrasted with the previous study in which only 1 out of 60 fathers were skilled or unskilled.

Fathers in the present study do not differ significantly from sub-group to sub-group in frequency of father-son activities, except that the high-achieving Ss' fathers are more frequently found than others in the once-per-month or less category. The previous study showed significant differences in amount of father-son activity in favor of high-achievers; this was not confirmed in the present study.

No statistically significant differences are found in identification (or attitude) with father, in contrast to previous findings in which fathers of high-achievers were more admired and fathers of low-achievers were more likely to be negatively characterized. In both studies approximately ½ of the Ss professed strong admiration for their fathers.

In regard to school identification, it is seen that arithmetic is the most frequently mentioned academic subject as "best liked". Science and social science are second. There is no significant difference among groups. In the previous study, science was most frequently listed as best-liked, arithmetic second, and social studies a poor third. There were, however, significant differences in non-academic areas, in that average- and low-achievers preferred physical education more than did high-achievers, and low-achievers also preferred shop classes more than did the other groups. Of the academic subjects, the least liked was English (especially grammar), a finding common to both studies. Low- and average-achievers liked social studies less than did high-achievers, which again confirms previous findings. In non-academic areas, music (as opposed to band) was least liked.

High-achievers saw in school an opportunity to develop their talents; low and average-achievers saw school primarily as a place to further occupational ambitions. However, when directly questioned about the values of school in preparation for one's life work, all felt it was important.

In identification with teacher, most Ss felt that teachers hold norms for model pupils as being docile and conforming. Whereas in the previous study, high-achievers tended to approve and low-achievers tended to disapprove of this model, in the present study most Ss tended to approve of the model and there were no significant differences among groups. Apparently, the present sample is more willing (at least on a verbal level) to accept conformity as a way of life. High-achieving Ss characterized themselves as like the model more frequently than the other groups; the average-achieving Ss more frequently mentioned "try to be like the model"; but both average- and low-achievers agreed they are not like the model. This confirms previous results; it also suggests the candidness and realism of Ss. High-achievers seem to care more than others about the teacher's opinion of them.

In previous work, attributes of the favorite teacher tended toward academic competence insofar as high-achievers were concerned, and toward kindness and cheerfulness insofar as low-achievers were concerned. However, in the present study there were no significant differences among groups. Cheerfulness and humor were mentioned most frequently, kindness and understanding secondly, and academic competence thirdly. Sixty-two Ss mentioned that they had no favorite teachers.

Peer relations answers confirmed essentially the results of a previous study. "Personality" and "athletic and personality" characteristics were mentioned most frequently in regard to popular peers. Interestingly, the low-achievers mentioned "scholarship and personality" more frequently than others. As found previously, "good" students are admired by less than half of the Ss, although this finding differentiated between high- and low-achievers previously, but not in the present study. About ¼ of the Ss characterize good students as "squares", in each study; although previously this differentiated good from poorer students, it was not the case in the present study. Both studies showed that Ss agree that the prevailing pupil norm in regard to academic effort was that of just "doing enough to get by".

In regard to attitudes toward poor school achievement, both parents and teachers mention pupil failing to most Ss. More parents urge, reason, and advise than chastize. In both studies, however, this behavior was more characteristic of parents of high-achievers. Parental tactics improved motivation to achieve in both studies; however, average- and low-achievers in the present study are more likely to have only temporary improvement. High-achieving Ss, average- and low-achievers represent degrees of satisfaction with their marks, in that order. Apparently, Ss are concerned about their achievement, or at least are "grade conscious". In both studies, when marks were poor, Ss tended to blame themselves rather than the school or others.

Leadership activities were assessed. In regard to clubs and activities, in or out of school, it was found that most Ss belong to one or two, and about 40% of Ss mention leadership roles. There are no significant group differences. Most Ss have duties out of school, tending to center about the home and yard. Nearly all Ss enjoy sports. There is, however, a significant difference between high- and low- achieving Ss in that high-achievers enjoy reading for recreation.

Heterosexual relationships do not differ among groups. Since these Ss are in early adolescence, it is not surprising that only 120 out of 261 state a liking for dates or other "boy-girl" activities.

TABLE 3

SUMMARY OF INTERVIEW FINDINGS; PRESENT AND PREVIOUS STUDIES.

Present study	Previous study
Favorite occup. choice-engineering.	Favorite occup. choice-engineering.
Most Ss have occupational choice.	Most Ss have occupational choice.
Most Ss are college-oriented.	Most Ss are college-oriented.
Most Ss prefer professional or managerial occupation.	Most Ss prefer professional or managerial occupation.
High-achievers comparatively more interested in law & politics.	High-achievers comparatively more interest in law & politics.
High-achievers compar. more interested in natural science.	
Av-achievers compar. more interested in social sciences.	
Low-achievers compar. more interested in skilled trades.	Low-achievers compar. more inter. in engineering.
High-achievers compar. more interested in employing talents.	
Av- and low-achievers compar. more inter. in adventure and intrinsic job interest.	
Hi-achievers gain vocational interest more frequently from school.	
Quality of job information low.	

Present study	Previous study
Quality of job information low.	Quality of job info. low.
Experience with job-like activity meagre.	Experience with job-like activity meagre.
Wide variety of role models.	Wide variety of role models.
Parents are occupat. choice discussants.	Parents are occupat. choice discussants.
Certainty of job choice highest for high-achievers.	
Approx. 1/3 sample uncertain about occupat. choice.	Approx. ¼ sample uncertain about about occupat. choice.
No diff. between groups in realism of plans.	High Ss more realistic in plans.
Low-achievers' fathers more likely to be unskilled.	
Hi- and av-achievers" fathers more likely to be skilled.	Only 1 father in skilled occupat.
Hi- and av-achievers' fathers more likely to be professors.	
Frequency of father-son activities invariant among groups.	Frequency of father-son activities favors high-achievers.
No sign. diff. in father-identif.	Fathers of high-achievers most admired.
50% of fathers strongly admired.	50% of fathers strongly admired.
Arithmetic best liked.	Science best liked.
Science and soc. science second most liked.	Arithmetic second choice.
Av- and low-achievers prefer phys. educ. more than hi-achievers.	
Low-achievers comparat. prefer shop classes more than others.	
English least liked.	English (grammar) least liked.
Low and av. Ss like soc. studies less than high Ss.	Low and av. Ss like soc. studies less than high Ss.
Music least liked.	
School valuable for vocat. prep.	School valuable for vocat. prep.
Ss perceive teachers as holding pupil model of conformity.	Ss perceive teachers as holding pupil model of conformity.
Most Ss approve conformity model.	High Ss approve model, low Ss do not.
High Ss more like model.	
Aver. Ss "try to be like" model.	High Ss are more like model.
Aver. and low are not like model.	Low Ss are not like model.
High Ss care more than others about teacher opinion.	
Favorite teacher is cheerful, humorous.	High Ss favor teachers' academic competence. Low Ss favor kindness, humor.

Present study	Previous study
Personality & athletic ability charact. of popular peers.	Personality & athletic ability charact. of popular peers.
"Good" students admired by less than half sample.	"Good' students admired by hi-achievers, not by low-achievers.
½ Ss charact. "good" students as "squares".	Low-achievers charact. "good" students as "squares".
Peer norm is of doing enough to get by.	Peer norm is of doing enough to get by.
Parents of hi-achievers more likely to advise, reason.	Parents of hi-achievers more to advise, reason.
Motivation improved by parental discussion.	Motivation improved by parental discussion.
Aver. and low Ss improved temporarily.	
Achievement related to satisfaction with marks.	Achieve. related to satisfaction with marks.
Ss blame selves for poor marks.	Ss blame selves for poor marks.
Signif. more high Ss enjoy reading for recreation.	
Less than ½ Ss enjoy heterosexual relationships.	

California Psychological Inventory Data.

Table 4 shows means and standard deviations for raw scores for the various categories of the California Psychological Inventory. Table 5 shows T-tests (two-tailed) of significance of differences between means. Table 5 is of particular interest in denoting differences among the high-, average-, and low-achieving Ss.

TABLE 4

MEANS, s.d.'s, AND SIGNIFICANCE OF MEAN DIFFERENCES FOR CALIFORNIA PSYCHOLOGICAL INVENTORY VARIABLES OF 261 BRIGHT 8th-GRADE BOYS.

Variable	Total N= 261		High N= 88		Average N= 85		Low N= 88	
	$\bar{X}$	s.d.	$\bar{X}$	s.d.	$\bar{X}$	s.d.	$\bar{X}$	s.d.
Do	25.12	5.89	26.38	6.41	25.29	5.64	23.71	5.32
Cs	13.92	3.41	14.35	3.55	14.08	3.12	13.34	3.50
Sy	22.38	4.81	22.10	5.39	23.01	4.49	22.03	4.50
Sp	29.46	4.89	29.27	4.96	29.81	5.17	29.30	4.57
Sa	18.20	3.45	18.28	3.38	18.65	3.52	17.69	3.42
Wb	31.74	6.20	33.75	5.33	32.28	5.69	29.20	6.73
Re	27.47	5.32	30.11	4.31	27.74	5.23	24.55	4.84
So	33.46	6.32	35.99	5.43	33.53	6.43	30.88	6.05
Sc	24.20	8.46	26.66	8.23	23.72	8.92	22.22	7.69
To	17.77	4.84	19.74	4.32	17.67	4.99	15.90	4.48
Gi	12.85	5.78	13.34	6.12	13.00	5.80	12.20	5.36
Cm	24.77	3.45	25.68	2.18	25.40	2.99	23.26	4.32
Ac	23.40	4.89	25.49	4.32	23.47	4.70	21.26	4.75
Ai	16.12	4.14	18.05	3.58	16.22	3.73	14.09	4.11
Ie	32.75	5.30	34.92	4.26	33.41	4.69	29.94	5.61
Py	9.02	2.13	9.44	2.09	9.12	2.11	8.51	2.08
Fx	9.80	3.60	9.59	3.68	9.98	3.56	9.84	3.60
Fe	16.24	3.34	17.09	3.34	16.31	3.26	15.34	3.22

TABLE 5

DIFFERENCES IN MEANS, CALIFORNIA PSYCHOLOGICAL INVENTORY OF 261 BRIGHT 8th-GRADE BOYS

Variable	$\bar{X}_{Hi}-\bar{X}_{Av}$	t	p	$\bar{X}_{Hi}-\bar{X}_{Av}$	t	p	$\bar{X}_{Hi}-\bar{X}_{Av}$	t	p
Do	1.09	1.124		2.67	3.000	< .01	1.58	1.904	<10<05
Cs	.27	.220		1.01	1.906	<10<05	.74	.655	
Sy	- .91	1.213		.07	.093		.98	1.441	
Sp	- .54	.783		- .03	.042		.51	.689	
Sa	- .37	.712		.59	1.157		.96	1.846	< .10
Wb	1.47	1.771		4.55	5.050	< .01	3.08	3.312	<.01
Re	2.37	3.247	<.01	5.56	8.176	< .01	3.19	4.143	<.01
So	2.46	2.733	<.01	5.11	5.874	<.01	2.65	2.789	<.01
Sc	2.94	2.262	<.05	4.44	3.700	<.01	1.50	1.181	
To	2.07	2.915	<01	3.84	5.818	<.01	1.77	2.458	< .05
Gi	.34	.374		1.14	1.310		.80	.941	
Cm	.28	.718		2.42	4.745	<.01	2.14	3.821	<.01
Ac	2.02	2.928	<.01	4.23	6.221	<.01	2.21	3.069	<.01
Ai	1.83	3.268	<01	3.96	6.828	<.01	2.13	3.610	<.01
Ie	1.51	2.221	<.05	4.98	6.640	<.01	3.47	3.449	<.01
Py	.32	1.000		.93	3.000	<.01	.61	1.906	<.10
Fx	- .39	.684		- .25	.446		.14	.259	
Fe	.78	1.560		1.75	3.571	<.01	.97	1.980	< .05
	df=171			df= 174			df= 171		

(two-tailed test)

It is seen that high- and average-achievers were significantly higher on the Dominance scale than were low-achievers. High-achievers and average-achievers were higher in regard to Sense of Well-Being, Responsibility, Socialization, and Tolerance; and high-achievers were higher than average- or low-achievers in regard to Self Control. High-, average, and low-achievers appeared in that order in regard to Achievement via Conformance, Achievement via Independence, and Intellectual Efficiency. High- and average-achievers were higher in Psychological Mindedness and Feminity, (lower in masulinity).

According to Gough (20), the Do and Wb scales are representative of measures of poise, self-assurance, and ascendancy; hence high-achievers appear on two of the six ascendancy scales as more ascendant than average-, and average- more ascendant than low-achievers. The tendency, in view of the fact that four scales did not show this significant difference, may be considered as relatively weak. It should also be noted that average-achievers as compared to low-achievers merely approached statistical significance in regard to the Do scale.

However, stronger differences were found in regard to the measures of socialization, maturity, and responsibility, namely the Re, So, Sc, To, and Cm scales. It seems demonstrated that achievement is closely related to measures of socialization; low-achievers can be said to be less mature and less responsible insofar as this test is concerned.

The Achievement via Conformance, Achievement via Independence, and Intellectual Efficiency scales purport to be measures of achievement potential and intellectual efficiency. It seems clear that school achievement is related to these variables.

It is also seen, however, that low-achievers seem somewhat less feminine (or more masculine)than high-achievers. This is seen as assessing the masculinity or femininity of interests; high scores are viewed as more appreciative, patient, helpful, gentle, moderate, perservering, and sincere; as being respectful and accepting of others; and as behaving in a conscientious and sympathetic way. Again, it might almost be said that "good" students are well-socialized and conforming, in terms of this particular scale as well as those listed above.

To the extent that high scores on the CPI indicate "good adjustment", it may be said that high-achievers are somewhat better adjusted than average- and average- better adjusted than low-achievers. This corresponds only partly to the findings of the previous study, in which California Test of Personality scores were significantly different for high- and low-achievers in Sense of Personal Worth, Family Relations, and School Relations. The overall previous findings did not suggest strong differences between the samples. In contrast, this study shows many areas in which high-achievers are superior to low-achievers (and frequently, to average-achievers), leading to the conclusion that there are significant differences in adjustment. As previously noted, however, samples were matched, in the previous study, but not in the present one. Further, socio-economic factors were previously held stable.

Table 6 shows rotated factor matrices for the total sample and various sub-groups of Ss. Image analyses, Case 1, with eigen values of 1 were employed, using the IBM 1604 computer. (See Appendix 1 for factor matrix and other information). *

TABLE 6

ROTATED FACTOR MATRICES, CALIFORNIA PSYCHOLOGICAL INVENTORY.(VARIMAX)

Variable	Total Sample N=261					High Achievers N=88			
	F_1	F_2	F_3	F_4	F_5	F_1	F_2	F_3	F_4
Do	.172	.779*	.244	.084	.042	.167	.800*	-.115	-.146
Cs	.530*	.526*	.098	-.330	.119	.612*	.520*	.084	.351
Sy	.135	.850*	.128	.041	-.111	.217	.849*	.080	-.000
Sp	-.083	.734*	-.012	-.271	-.334	.098	.617*	.562*	.139
Sa	-.069	.875*	-.047	.039	-.013	-.089	.880*	.152	.035
Wb	.341	.110	.785*	-.094	-.214	.773*	.110	-.068	-.319
Re	.355	-.012	.729*	.012	.333	.640*	-.023	-.401	-.387
So	.249	-.023	.807*	.222	.098	.466*	-.019	-.528*	-.356
Sc	.760*	-.273	.477*	.029	.153	.784*	-.261	-.445*	.010
To	.574*	.143	.558*	-.348*	.057	.885*	.119	.082	.015
Gi	.828*	-.017	.225	.135	.059	.684*	.170	-.400*	.328
Cm	-.323	.102	.824*	.087	-.109	.068	.024	-.125	-.897*
Ac	.506*	.206	.648*	.065	.243	.681*	.208	-.502*	-.173
Ai	.475*	.055	.413	-.514*	.221	.728*	-.080	.245	.073
Ie	.307	.331	.660*	-.365	.064	.709*	.276	.174	-.207
Py	.636*	.226	.017	-.062	-.140	.542*	.195	-.007	.016
Fx	-.072	-.032	-.150	-.839*	-.085	.055	-.030	.737*	.211
Fe	.009	-.169	.051	.016	.915*	-.094	-.218	-.618*	.124

F_1	Mature striving.	F_2	Mature striving.
F_2	Self confidence or ascendency.	F_2	Self confidence or ascend.
F_3	Social Adjustment.	F_3	Independency or non-conformity.
F_4	Non-conformity.	F_4	Conventionality.
F_5	Masculinity.		

TABLE 6 (con.)

Variable	Average Achievers N=85					Low Achievers N=88				
	F_1	F_2	F_3	F_4	F_5	F_1	F_2	F_3	F_4	F_5
Do	-.247	-.808*	.051	.033	.134	-.161	.766*	.270	.067	-.067
Cs	-.505*	-.574*	-.287	-.150	.123	-.210	.449*	.141	-.597*	.233
Sy	-.093	-.870*	.065	.099	.157	-.080	.842*	.231	-.041	-.070
Sp	.121	-.786*	.130	-.298	.189	.125	.766*	-.084	-.119	-.297
Sa	.155	-.854*	-.096	.016	-.078	.029	.869*	-.045	.078	.020
Wb	-.699*	-.124	.440*	-.145	.208	-.092	.136	.780*	-.139	-.407*
Re	-.777*	.017	.188	.199	-.132	-.016	-.033	.814*	-.178	.303
So	-.646*	.055	.531*	.248	.040	-.026	.065	.902*	.092	-.015
Sc	-.904*	.265	.023	.135	.079	-.608*	-.226	.572*	-.277	.240
To	-.809*	-.211	.144	-.265	-.048	-.390	.089	.558*	-.507*	-.059
Gi	-.817*	.165	-.108	.249	.156	-.725*	.020	.369	-.142	.168
Cm	-.199	-.028	.886*	.024	.002	-.488*	.215	.638*	.106	-.290
Ac	-.816*	-.224	.199	.135	-.111	-.346	.259	.704*	-.137	.097
Ai	-.723*	-.128	-.076	-.344*	-.251	-.250	.005	.329	-.745*	.129
Ie	-.694*	-.367	.260	-.275	-.041	-.062	.370	.576*	-.525*	-.092
Py	-.435*	-.306	-.266	-.082	.460*	-.779*	.143	-.120	-.062	-.159
Fx	.057	- .004	-.060	-.884*	.048	.047	-.253	-.200	-.702*	.153
Fe	-.167	.210	-.084	.020	-.870*	-.026	-.179	-.027	-.016	.871*

F_1	Mature Striving.	F_1	Unconcern for others.
F_2	Ascendency, self-confidence.	F_2	Ascendency.
F_3	Conventionality- social adjust.	F_3	Mature striving.
F_4	Independence or non-conformity.	F_4	Independence or non-conformity.
F_5	Masculinity.	F_5	Masculinity.

Factors interpreted and named were as follows:

Total sample:	I.	Mature striving.
	II.	Ascendency.
	III.	Social adjustment.
	IV.	Non-conformity.
	V.	Masculinity.
High-achievers.	I.	Mature striving.
	II.	Ascendency.
	III.	Independence or non-conformity.
	IV.	Conventionality.
Average-achievers.	I.	Mature striving.
	II.	Ascendency.
	III.	Conventionality.
	IV.	Independence or non-conformity.
	V.	Masculinity.
Low-achievers.	I.	Unconcern for others, lack of socialization.
	II.	Ascendency.
	III.	Mature striving.
	IV.	Independence or non-conformity.
	V.	Masculinity.

In effect, the interpreted factors tend to reflect the the statistically significant mean differences shown in Table 5. They also roughly correspond to Class I, Class II, and Class III categories for items given by Gough.

(Reference is made to the factor analyses of Crites et al (10) and of Mitchell and Pierce-Jones (25). It should be noted that neither of these studies agreed with the other in regard to factors interpreted, nor do either of them agree with the present study. One reason may be in the fact that the intercorrelations between scales of the CPI given in the Manual (p. 40) do not agree with the intercorrelations shown by Crites et al; Mitchell and Pierce-Jones do not show intercorrelations.)

In the present study there was more apparent agreement among the categories of Gough's Group I, II, and III factors, tending to substantiate his groupings. In contrast, however, Gough shows four categories: ascendency, socialization, achievement, and interest mode, and this study tends to five factors. The difference is largely in regard to Gough's Category IV, interest mode. Factors of non-conformity, masculinity, and conventionality seemed largely independent. Thus one might strive in a conforming, conventional way, or he might strive in an independent or non-conforming way. It is interesting to note that the masculinity factor is independent, except for the low-achievers, where it appears together with "well-being". For this group one's feeling of well-being seems closely related to the extent of his masculinity.

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*Case one: The number of factors to be extracted is equal to the number of eigenvalues of the correlation matrix (with ones in the diagonal) which are greater than unity.

Bills Index of Adjustment and Values.

Table 7 presents data concerning Bills IAV. It may be remembered that "Column II" is considered an estimate of self-acceptance; the discrepancy between Columns I-III is also an estimate of self-acceptance. In relating Column II to Column I-III discrepancy, there should be negative correspondence; e.g. high discrepancy should be correlated with low self-acceptance.

TABLE 7

BILLS IAV SELF-ACCEPTANCE AND DISCREPANCY SCORES
MEANS, s.d.'s, AND TESTS OF SIGNIFICANCE FOR MEAN DIFFERENCES
OF 261 BRIGHT 8-th GRADE BOYS.

	Total Sample N=261		High N=88		Average N=85		Low N=88	
	Col II	Disc. I-III	Col II	Disc. I-III	Col II	Disc. I-III	Col II	Disc. I-III
$\bar{X}$	50.59	15.16	50.01	14.92	50.31	14.87	51.42	15.68
s.d.	11.79	7.26	11.79	6.20	12.54	8.39	11.08	7.11

		dif.	t (2 tailed)	p
$\bar{X}$ Hi-Av	(II)	-.30	.1613	N S
$\bar{X}$ Hi-Lo	(II)	- 1.41	.8198	N S
$\bar{X}$ Av-Lo	(II)	- 1.11	.6167	N S
$\bar{X}$ Hi-Av	(I-III)	.05	.0446	N S
$\bar{X}$ Hi-Lo	(I-III)	-.76	.7238	N S
$\bar{X}$ Av-Lo	(I-III)	-.81	.6864	N S

It is seen that there are no statistically significant differences between the groups for either measure. It may be concluded that "self-acceptance" and discrepancy between perceived and ideal "self" do not distinguish between these groups insofar as the IAV is concerned.

In the previous study "A Self Test" (5), an instrument released only for research purposes and developed by Bowers and Lambert (5), was employed to assess self-acceptance. This instrument also found no significant differences in self acceptance between high- and low-achievers.

CARD SORT FOR NON-CONFORMITY, INDEPENDENCE, ACHIEVEMENT MOTIVE, AND AFFILIATION MOTIVE.

Table 8 presents findings for the Card Sort, especially developed for the previous study and modified for the present study. A lower mean score indicates that the variable or trait is more representative of the group than does a high score.

TABLE 8

MEANS, s.d.'s, AND TEST OF SIGNIFICANCE OF MEAN DIFFERENCES, CARD SORT VARIABLES FOR 261 BRIGHT 8th-GRADE BOYS

	Total Ss N=261	High Ss N=88	Average Ss N=85	Low Ss N=88
Non-Conformity				
$\bar{X}$	7.17	7.30	7.32	6.90
s.d.	.79	.74	.82	.73
Independence				
$\bar{X}$	5.09	4.98	5.06	5.24
s.d.	.68	.64	.68	.69
Achievement				
$\bar{X}$	4.55	4.17	4.49	4.98
s.d.	.89	.77	.80	.90
Affiliation				
$\bar{X}$	4.80	5.15	4.69	4.55
s.d.	.99	.96	1.04	.87

		dif.	t (2 tailed)	p
$\bar{X}$ (Hi-Av)	(Non-conformity)	-.02	.1666	N S
$\bar{X}$ (Hi-Lo)	(")	.40	3.6364	$<.01$
$\bar{X}$ (Av-Lo)	(")	.42	3.5000	$<.01$
$\bar{X}$ (Hi-Av)	(Independence)	-.08	.8000	N S
$\bar{X}$ (Hi-Lo)	(")	-.26	2.6000	$<.01$
$\bar{X}$ (Av-Lo)	(")	-.18	1.[illegible]00	N S
$\bar{X}$ (Hi-Lo)	(Achievement)	-.32	2.6667	$<.01$
$\bar{X}$ (Hi-Av)	(")	-.81	6.2308	$<.01$
$\bar{X}$ (Av-Lo)	(")	-.49	3.7692	$<.01$
$\bar{X}$ (Hi-Av)	(Affiliation)	.46	3.0667	$<.01$
$\bar{X}$ (Hi-Lo)	(")	.60	3.3333	$<.01$
$\bar{X}$ (Av-Lo)	(")	.14	.9333	N S

It is seen that high achieving Ss and average achieving Ss are more conforming than low achievers, but there are no differences between high- and average-achievers. This may be interpreted to mean that high- and average achieving Ss are less non-conforming, or less rebellious than low-achievers. However, high achievers are more independent and autonomous than low-achieving Ss, with average-achievers in between, but not statistically significantly different from either high or low Ss.

High-achievers are significantly more achievement-oriented than average-achievers, who, in turn, are more achievement-oriented than low-achievers. On the other hand, average & low achieving Ss are significantly more affiliation-oriented than high-achievers. These dimensions confirm results of the previous study.

Because in the previous study it was difficult to distinguish what was meant by non-conformity as to autonomy vs rebellion, the present study developed scales to distinguish between the two concepts, whereas only one scale had been employed previously. The notion that "non-conformity" may represent either rebellion or autonomy was substantiated by present results.

Intercorrelations of Various Measures.

Attention is invited to Appendix K, which presents the intercorrelations between variables of the study for the total sample and sub-groups of Ss.

Regression analyses to predict grade-point-averages and ITSB scores were made and will be presented shortly. It may be of interest to note the degree to which various instruments confirm or support each other.

It may be trite to call attention to the high correlations between the WISC Full Scale and the WISC Verbal, and WISC Performance Scales, suggesting that they are not independent of one another. With this group of Ss, it should be noted the correlations of FS and V are somewhat higher than FS and P or P and V, the latter, especially, correlating poorly with each other.

The WISC FS correlates well with the ITBS and significantly (r= +.30 or higher) with grade-point-averages. However, the WISC V correlates even higher with ITBS and GPA, whereas WISC P correlates poorly indeed.

GPA's correlate highly with each other and with ITBS, the former being higher. There is apparently a high degree of stability of performance from one measure to another. It can be stated that Ss grade-point-averages in 8th-grade represent a trend already present in 7th=grade. These findings corroborate findings of other studies.

The first six CIP variables (Do, Cs, Sy, Sp, Sa, Wb) are highly intercorrelated as might be expected; Gough refers to them as Class I variables, measures of poise, ascendancy and self-assurance. None of these correlate highly with measures of intelligence or achievement, tending to confirm the impression gained from the IAV that self-acceptance is not a good predictor of achievement, nor are measures of dominance.

The next six variables (Re, So, Sc, To, Gi, and Cm) are known as Class II variables, measures of socialization, maturity, and responsibility. It is seen that they correlate well with Class III variables, measures of achievement potential and intellectual efficiency (Ac, Ai, and Ie) as well as with each other. This was seen in the factor analysis also, contributing to a factor labelled as mature striving.

The final (Class IV) variables, measures of intellectual and interest modes, seem relatively independent of other variables in the study, although Py (Psychological-mindedness is somewhat related to capacity for status, self-control, tolerance, desire and ability to make a good impression, and to achievement via conformity. This suggests that Py may be a measure of understanding of others which can contribute to behaving in ways of which others approve.

The IAV is negatively correlated with IAV- Discrepancy, as expected. It does not seem related to other variables. However, IAV-discrepancy is negatively correlated with dominance, sociability, and to a lesser degree, with measures of socialization such as CIP self-acceptance, feeling of well-being, self-control, communality, and achievement via independence. Thus there seems to be a constellation of "poor adjustment" reflected in these intercorrelations.

It will be remembered that card-sort variables are reversed from other variables (except IAV-discrepancy) in that a high score suggests that the trait is less like S than does a low score. It is seen that non-conformity is correlated negatively with achievement motive and affiliation motive. Independence is highly negatively correlated with affiliation motive. Affiliation is negatively correlated with independence.

Positive correlations of non-conformity with various achievement measures (gpa, ITSB) suggest that high-nonconformers do not do as well in tests and school subjects as do conformers. Non-conformity is also positively correlated with responsibility, socialization, self control, tolerance, and CIP achievement scores. This is not seen for the variable of independence. (Positive correlations in actuality reflect reverse trends, since Non-conformity scores are the reverse of others). The negative correlations of card-sort achievement scores with school gpa's and ITSB, together with CIP measures of socialization and achievement suggest that the achievement motive and socialization are closely related, and are being measured by several tests and techniques.

Finally, affiliation motive is highly negatively related to independence and somewhat negatively related to non-conformity. Non-conformists, as measured here, seem somewhat like "lone wolves." Independence also, it would seem, leads S away from others insofar as motivation is concerned.

The sub-groups show similar trends, although intercorrelations are not so high as for the total group, as might be expected. Of the sub-groups, highest intercorrelations, in general, are found with the average achieving Ss, with the low-achievers showing fewest significant intercorrelations, especially with measures of achievement.

Regression analysis was disappointing, because of a lack of "best fit" regression program for the #1604 IBM computer. This program is in process and it is anticipated that further analysis of the data may be forthcoming later.

Table 9 shows various regression equations, together with multiple correlation coefficients, based on two WISC scores (FS and V), the CPI Re and CPI Ai scores, and the card-sort Achievement Motive score. Multiple R's range from .000 to .669, with little apparent consistency from one group to another or one prediction to another.

TABLE 9

REGRESSION EQUATIONS, MAXIMUM CONTRIBUTION, USED IN PREDICTING ITSB, 7th gpa, 8th gpa, AND AVERAGE gpa.

Prediction of ITSB scores, using WISC FS, CPI Re, CPI Ai and card-sort achievement motive scores.		
Total sample	ITSB= .62FS + .22 Re +.66 Ai - .23 Ach. + 7	R=.600
High Ss	ITSB= .41FS - .22 Re + .58 Ai + .22 Ach. + 71	R=.537
Aver. Ss	ITSB= .19FS + .03 Re + .16 Ai + .61 Ach. + 93	R=.214
Low Ss	ITSB= .51FS + .33 Re + .06 Ai - .39 Ach. - 22	R=.342
Prediction of ITSB scores, using WISC FS, CPI Re, and CPI Ai scores.		
Total sample	ITSB= .62FS + .39 Re + .66 Ai + 24	R=.610
High Ss	ITSB= .41FS - .25 Re + .58 Ai + 75	R=.530
Aver. Ss	ITSB= .20FS - .02 Re + .16 Ai + 95	R=.201
Low Ss	ITSB= .51FS + .38 Re + .06 Ai + 43	R=.342
Prediction of ITSB scores using WISC-V + CPI Re, CPI Ai, and card-sort achievement motive scores.		
Total sample	ITSB= .63VS + .46 Re + .50 Ai - .22 Ach. + 28	R=.680
High Ss	ITSB= .41VS - .23 Re + .60 Ai + .57 Ach. + 66	R=.558
Aver. Ss	ITSB= .19VS + .09 Re + .10 Ai + .81 Ach. + 94	R=.268
Low Ss	ITSB= .49VS + .31 Re - .06 Ai - .58 Ach. + 19	R=.454
Prediction of ITSB scores using WISC-V, CPI Re, and CPI Ai scores.		
Total sample	ITSB= .63VS + .34 Re + .50 Ai + 22	R=.669
High Ss	ITSB= .41VS - .28 Re + .62 Ai + 76	R=.562
Aver. Ss	ITSB= .20VS + .03 Re + .11 Ai + 96	R=.270
Low Ss	ITSB= .49VS + .35 Re - .06 Ai - 46	R=.461

Prediction of 7th-grade gpa using WISC FS, CPI Re, CPI Ai. and card-sort achievement motive scores.

Total sample	7 gpa= .02FS + .01 Re + .03 Ai - .27 Ach. + 5	R=.424
High Ss	7 gpa= .01FS + .002Re - .03 Ai - .05 Ach. + 3	R=.286
Aver. Ss	7 gpa=-.02FS - .01 Re + .01 Ai + .06 Ach. + 5	R=.304
Low Ss	7 gpa= .002FS -.002Re + .01 Ai - .19 Ach. + 3	R=.000

Prediction of 7th=grade gpa using WISC FS, CPI Re, CPI Ai scores.

Total sample	7 gpa= .02FS + .03 Re + .03 Ai - 1	R=.502
High Ss	7 gpa= .01FS + .01 Re - .03 Ai + 2	R=.281
Aver. Ss	7 gpa=-.02FS -.002 Re + .01 Ai + 5	R=.310
Low Ss	7 gpa=-.001FS +.01 Re + .01 Ai + 2	R=.000

Prediction of 7th-grade gpa using WISC-V, CPI Re, CPI Ai, and card-sort achievement motive scores.

Total sample	7 gpa= .02VS + .01 Re + .02 Ai - .20 Ach. + .52	R=.521
High Ss	7 gpa= .01VS +.003 Re - .03 Ai - .04 Ach. + 3	R=.274
Aver. Ss	7 gpa=-.02VS - .01 Re + .02 Ai - .08 Ach. + 6	R=.391
Low Ss	7 gpa=.001VS -.002 Re + .01 Ai - .17 Ach. + 3	R=.214

Prediction of 7th-grade gpa using WISC-V, CPI Re, and CPI Ai scores.

Total sample	7 gpa= .02VS + .03 Re + .02 Ai - .93	R=.454
High Ss	7 gpa= .01VS + .01 Re - .03 Ai + 3	R=.257
Aver. Ss	7 gpa=-.02VS - .01 Re + .01 Ai + 6	R=.374
Low Ss	7 gpa=-.001VS +.01 Re + .01 Ai + 2	R=.000

Prediction of 8th=grade gpa using WISC-FS, CPI Re, CPI Ai, and card-sort achievement motive scores.

Total sample	8 gpa= .02FS + .02 Re + .02 Ai - .23 Ach. + .32	R=.424
High Ss	8 gpa≠ .01FS + .02 Re - .02 Ai - .12 Ach. + 2	R=.408
Aver. Ss	8 gpa=-.005FS +.01 Re - .01 Ai - .10 Ach. + 4	R=.190
Low Ss	8 gpa=-.0003FS+.01 Re + .01 Ai - .04 Ach. + 2	R=.000

Prediction of 8th-grade gpa using WISC-FS, CPI Re, CPI Ai scores.

Total sample	8 gpa= .02FS + .04 Re + .02 Ai - .60	R=.530
High Ss	8 gpa= .01FS + .03 Re - .02 Ai + 1	R=.456
Aver. Ss	8 gpa=-.01FS + .02 Re - .02 Ai + 4	R=.277
Low Ss	8 gpa=-.001FS -.01 Re + .01 Ai + 2	R=.000

Prediction of 8th-grade gpa using WISC-V, CPI Re, CPI Ai, and card-sort achievement motive scores.

Total sample	8 gpa= .02VS + .02 Re + .02 Ai - .22 Ach. - .21	R=.548
High Ss	8 gpa= .01VS + .02 Re - .02 Ai - .12 Ach. + 2	R=.411
Aver. Ss	8 gpa=.001VS + .01 Re - .02 Ai - .11 Ach. + 3	R=.264
Low Ss	8 gpa=-.01VS - .01 Re + .01 Ai - .03 Ach. + 2	R=.000

Prediction of 8th-grade gpa using WISC-V, CPI Re, and CPI Ai scores.

Total sample	8 gpa= .02VS + .04 Re + .02 Ai - 1	R=.503
High Ss	8 gpa= .01VS + .03 Re - .02 Ai + 1	R=.365
Aver. Ss	8 gpa=.001VS + .01 Re - .02 Ai + 3	R=.140
Low Ss	8 gpa=-.01VS - .01 Re + .01 Ai + 3	R=.000

It is evident and might be anticipated, that WISC scores add relatively little to prediction, given this sample of a restricted IQ range. It is possible that if various combinations of gpa were included in the regression equations, better predictions might have been accomplished.

Variables chosen as predictors were those which by inspection appeared to have highest correlations with measures of achievement. However, interaction of such measures cannot be determined by inspection; it is probable that other combinations of predictors might yield better results.

TASKS ADMINISTERED ONLY TO HIGH- AND LOW-ACHIEVING SUBJECTS.

ADAPTATION OF DUNN'S VISUAL DISCRIMINATION TASK.

It will be recalled that the notion was held that low-achievers might be expected to have poorer quality of relationships with adult males than would high-achievers. This suggested that low=achievers might have more difficulty in discriminating male figures than neutral or female figures, and that threatening male figures would be discriminated less well than nurturning male figures.

Table 10 presents means of errors made, and related standard deviations for the various presentations and series of stimuli. It will be noted that the greatest number of errors made by both groups was in regard to the first presentation of the neutral sample stimuli (s_1). This is not surprising, since this series was the first opportunity for Ss to attempt the task; Ss received no training.

TABLE 10

MEANS AND s.d.'s OF ERRORS FOR ADAPTATION OF DUNN'S VISUAL DISCRIMINATION TASK, HIGH- AND LOW-ACHIEVERS.

	High Ss	N=68	Low Ss	N=68
	$\bar{X}$	s.d.	$\bar{X}$	s.d.
Sample 1	2.06	1.15	1.79	1.00
Sample 2	1.24	.91	1.23	.96
Male thr. 1	1.71	.93	1.74	.81
Male thr. 2	1.00	.59	1.34	1.11
Male nurt. 1	1.72	1.08	1.56	.92
Male nurt. 2	1.19	.68	1.15	.85
Female thr. 1	1.56	.94	1.66	.59
Female thr. 2	1.31	.73	1.32	1.01
Female nurt. 1	1.93	1.13	1.76	1.25
Female nurt. 2	1.46	1.00	1.32	1.01
Total admin. 1	8.91	3.52	8.32	3.22
Total admin. 2	6.18	2.20	6.38	3.13

It is seen that the total number of errors made during the first presentation for all series is higher than the total number of errors made during the second presentation of all series for both groups. This data, in addition to data presented in Table 11 suggest that there was an adaptation to the task between the first and second presentation of each series. Although the order of presentations within a series differed from the first to the second presentation, apparently Ss learned to anticipate the tachistoscopic projections and to focus upon the particular area of the stimulus which varied. Since mean errors varied somewhat from presentation to presentation and from group to group, and no apparent consistency can be noted, it is suggested that there was nothing about the stimuli themselves which contributed to a particular learning advantage within any series; i.e. no stimuli seemed easier to discriminate than any other with any consistency.

TABLE 11

DIFFERENCES IN NUMBER OF ERRORS BETWEEN FIRST AND SECOND ADMINISTRATION OF FIGURE SETS, DUNN'S VISUAL DISCRIMINATION TASK.

High Ss N=68	dif.	t	p
$\bar{X}$ s(1) - $\bar{X}$ s(2)	.82	4.56	$<.005$
$\bar{X}$ tot (1) - $\bar{X}$ tot (2)	2.73	5.46	$<.005$
$\bar{X}$ mt (1) - $\bar{X}$ mt (2)	.71	5.46	$<.005$
$\bar{X}$ ft (1) - $\bar{X}$ ft (2)	.25	1.79	$<.05$
$\bar{X}$ mn (1) - $\bar{X}$ mn (2)	.53	3.53	$<.005$
$\bar{X}$ fn (1) - $\bar{X}$ fn (2)	.47	2.24	$<.05 > .01$
Low Ss N=68			
$\bar{X}$ s(1) - $\bar{X}$ s (2)	.56	3.13	$<.005$
$\bar{X}$ tot (1) - $\bar{X}$ tot (2)	1.94	3.59	$<.005$
$\bar{X}$ mt (1) - $\bar{X}$ mt (2)	.40	2.50	$<.01$
$\bar{X}$ ft (1) - $\bar{X}$ ft (2)	.34	2.29	$<.05 > .01$
$\bar{X}$ mn (1) - $\bar{X}$ mn (2)	.41	2.72	$<.005$
$\bar{X}$ fn (1) - $\bar{X}$ fn (2)	.44	2.32	$<.01$

Legend:
S = sample (neutral).
tot= total of all figures.
mt= male, threatening.
mn= male, nurturing.
ft= female, threatening.
fn= female, nurturing.

In order to assess reliability, correlations between administrations of each series was made. The neutral series (s-1, s-2) were identical, providing some estimate of reliability. It is seen in Table 12 that the high-achievers correlation of S (1) S (2) was +.375 and the low-achievers' was +.539. Other correlations with the exception of total errors for all series show no consistency between groups. The correlations for S(1)S(2) suggest some stability in responses; the fact that correlations were not higher may be attributed to the fact that s (1) was the first task and a disproportionate number of errors was made for this series as compared to others. For future research it would seem desirable to have a training period and to provide additional estimates of reliability.

TABLE 12

CORRELATIONS BETWEEN FIRST AND SECOND ADMINISTRATIONS FOR GROUPS OF DUNN'S VISUAL DISCRIMINATION TASK, HIGH- AND LOW-ACHIEVERS.

	High *Ss* N=68	Low *Ss* N=68
r (sample) 1, 2 =	+ .375	+.539
r (male thr.) 1, 2 =	+ .289	-.003
r (male nurt.) 1, 2 =	+ .227	+.093
r (fem. thr.) 1, 2 =	+ .152	+.817
r (fem. nurt.) 1, 2 =	+ .158	+.176
r (total) 1, 2 =	+ .285	+.487

TABLE 13

SIGNIFICANT MEAN DIFFERENCES IN ERRORS MADE ON DUNN'S VISUAL DISCRIMINATION TASK

	High *Ss*			Low *Ss*
	dif.	*t*	*p*	
$\bar{X}$ sample, 1 - $\bar{X}$ male thr., 1	.35	1.94	$< .05$	N S
$\bar{X}$ s, 2 - $\bar{X}$ mt, 2	.24	1.85	$< .05$	
$\bar{X}$ s, 1 = $\bar{X}$ ft, 1	.50	2.78	$< .005$	
$\bar{X}$ s, 1 - $\bar{X}$ mn, 1	.34	1.79	$< .05$	
$\bar{X}$ mt, 2 - $\bar{X}$ ft, 2	- .31	2.82	$< .005$	
$\bar{X}$ mt, 2 - $\bar{X}$ fn, 2	- .46	3.29	$< .005$	
$\bar{X}$ ft, 1 - $\bar{X}$ fn, 1	- .37	2.06	$< .05$	
$\bar{X}$ mn, 2 - $\bar{X}$ fn, 2	- .27	1.80	$< .05$	

Legend:
s= sample (neutral).
mt= male, threatening.
mn= male, nurturing.
ft= female, threatening.
fn= female, nurturing.

Appendix G shows comparisons of high- and low-achievers errors for each series of stimuli. This data will not be reproduced here since the only statistically different means were in regard to the second presentation of the male threatening series, in which the high-achievers made significantly more errors.

Table 13 shows significant mean differences in errors made within groups. The low group of *Ss* had no significant differences in number of errors made between any series or between presentations. This refutes the notion stated earlier that low-achievers would be less successful in discriminating male and threatening figures.

However, high-achievers had difficulty with the presentation of the neutral series (s, 1 especially). They also had more difficulty in discriminating female figures as compared to male figures in regard to the three series.

It is suggested that high-achievers show more anxiety than low-achievers on this task, and that this anxiety is related to the female figure, whether nurturing or threatening. Should such finding be replicated, questions concerning male role, Oedipal resolutions, social reinforcement of mother as compared to father, and concerns regarding female teachers may be raised for further study.

Thematic Apperception Test.

The Thematic Apperception Test (10 cards) was scored according to the abbreviated key in Appendix I. As mentioned previously, the scorer is an advanced student in School Psychology; frequent spot-checking assured a degree of inter-rater reliability. The scorer randomly re-scored 25 protocols in order to ensure within-rater reliability.

Table 14 presents means, variances, mean differences, and significant test data for the variables scored.

TABLE 14

MEAN SCORES, VARIANCES, MEAN DIFFERENCES, AND SIGNIFICANCE TESTS FOR 10 CARD TAT (HIGH AND LOW Ss ONLY).

Variable	$\bar{X}$	var.	$\bar{X}_H - \bar{X}_L$	t	p
Self-esteem - Positive					
N= 87 High Ss	3.83	5.94	-.20	5.78	N S
N= 88 Low Ss	4.03	4.52			
Self-esteem - Negative					
High Ss	.94	1.71	.26	1.543	N S
Low Ss	.68	.77			
Security - Positive					
High Ss	.46	.48	-.04	.119	N S
Low Ss	.50	.76			
Security - Negative					
High Ss	.34	.46	.09	.089	N S
Low S s	.25	.24			
Insecurity - Security					
High Ss	.23	.25	-.01	.078	N S
Low Ss	.24	.28			

Variable	$\bar{X}$	var.	$\bar{X}_H - \bar{X}_L$	*t*	*p*
Perservering					
High *S*s	2.95	3.60	.23	.275	N S
Low *S*s	2.72	2.99			
Withdrawing					
High *S*s	.44	.43	.04	.411	N S
Low *S*s	.40	.40			
Aggression					
High *S*s	.36	.51	-.02	.181	N S
Low *S*s	.38	.56			
Agression reduced					
High *S*s	.25	.26	-.05	.609	N S
Low *S*s	.30	.33			
Frustration					
High *S*s	.75	.94	.01	.073	N S
Low *S*s	.74	.68			
Frustration reduced					
High *S*s	.77	1.04	.26	1.887	N S
Low *S*s	.51	.62			
Conflict					
High *S*s	.95	2.70	.10	.419	N S
Low *S*s	.85	2.29			
Conflict reduced					
High *S*s	.11	.15	-.03	.428	N S
Low *S*s	.14	.28			
Anxiety					
High *S*s	1.49	1.79	.22	1.124	N S
Low *S*s	1.27	1.56			
Anxiety resolved					
High *S*s	1.07	1.51	-.09	.474	N S
Low *S*s	1.16	1.65			
Guilt					
High *S*s	.61	.66	.09	.759	N S
Low *S*s	.52	.57			
Adult value oriented					
High *S*s	.26	.27	.02	.252	N S
Low *S*s	.24	.28			
Adult value neg. oriented					
High *S*s	.32	.36	.08	.922	N S
Low *S*s	.24	.30			

Variable	$\bar{X}$	var.	$\bar{X}_H - \bar{X}_L$	t	p
Parent identification					
High Ss	.75	.77	.28	2.370	$< .02$
Low Ss	.47	.60			
Negative parent identification					
High Ss	.34	.46	.01	.108	N S
Low Ss	.33	.29			
Heterosexual interest					
High Ss	.29	.35	-.10	1.034	N S
Low Ss	.39	.47			
Negative attitude toward females					
High Ss	.29	.25	-.05	.631	N S
Low Ss	.34	.30			

Evidence of self-esteem and of low self-esteem were scored seperately, as was the case in regard to security, attitude in favor of or negative to adult values, parent identification, and heterosexual interests. In certain variables, e.g. insecurity, a movement from insecurity to security was considered as "insecurity resolved." This was scored seperately, as was anxiety resolved, frustration resolved, and aggression reduced. For example, a protocol might mention feelings of dislike for someone, but as the story progressed, the disliked person might become the hero's friend. This would be considered aggression reduced.

In all instances the hero assumption was made.

It is seen from Table 14 that high-achievers and low-achievers did not differ significantly in protocols in regard to variables scored, except for parent identification, in which high-achievers were slightly more parent-oriented, a fact noted in the previous study. However, low-achievers did not significantly have negative feelings toward adult values or toward parents, as was interpreted previously from data available.

In substance, the TAT cards employed, scored according to the present method, do not differentiate high-achieving from low-achieving Ss. This may be partly because of the low comparative incidence of scores for each category which were obtained (note low means for the variables) but may also be an indication that no real differences exist between groups in needs, attitudes, or feelings expressed through the TAT. Recurring themes were noticed; such recurrances appeared as frequently in protocols of one group as in the other.

McClelland Projective Test.

Four cards adapted by Des Charmes from McClelland's projective task were employed, as described previously. Protocols were written by *S*s, hence were shorter than those obtained for TAT stories, above.

Table 15 presents data relevant to this measure. Protocols were scored for evidence of needs, defined as in Edwards Personal Preference Schedule (13), of achievement, exhibition, affiliation, abasement, aggression, succorance, nurturance, endurance, and as to evidence of acceptance of school values, social outcomes to stories, whether cheating, discipline problems, or crime was mentioned, and in regard to number of scorable responses and word count.

TABLE 15

MEANS, s.d.'s, AND CRITICALRATIOS FOR 4-CARD McCLELLAND TYPE (SCHOOL) PROJECTIVE TASK.

Variable		$\bar{X}$	*d*	σ_{dw}	C R	*p*
Achievement						
N=68	High *S*s	.94	.15	.18	.833	
N=68	Low *S*s	.79				
Exhibition						
	High *S*s	.10	-.05	.06	.833	
	Low *S*s	.15				
Affiliation						
	High *S*s	.46	.22	.07	3.14	$< .05$
	Low *S*s	.24				
Abasement						
	High *S*s	.16	.09	.05	1.80	
	Low *S*s	.07				
Aggression						
	High *S*s	.29	.14	.09	1.44	
	Low *S*s	.15				
Succorance						
	High *S*s	.31	.16	.08	2.00	$< .05$
	Low *S*s	.15				
Nurturance						
	High *S*s	.57	.07	.08	.88	
	Low *S*s	.50				
Endurance						
	High *S*s	.28	.09	1.12	.08	
	Low *S*s	.19	.08			

Variable	$\overline{X}$	*d*	σ_{dm}	C R	*p*
Accepted school values					
High *S*s	.49	.06	.14	.43	
Low *S*s	.43				
Non-accept. achool values					
High *S*s	1.18	.02	.16	.12	
Low *S*s	1.16				
Social outcome					
High *S*s	.74	.17	.17	1.00	
Low *S*s	.57				
Non-social outcome					
High *S*s	.46	.06	.11	.55	
Low *S*s	.40				
Sum of responses scorable					
High *S*s	6.75	1.21	.56	2.16	$< .05$
Low *S*s	5.54				
No. words/ protocol					
High *S*s	165.3	25.1	9.58	2.62	$< .05$
Low *S*s	140.2				
Cheating mentioned					
High *S*s	.29	- .08	.08	1.00	
Low *S*s	.37				
Discipline probs. mentioned					
High *S*s	.49	.18	.09	2.00	$< .05$
Low *S*s	.31				
Crime mentioned					
High *S*s	.25	-.03	.07	.43	
Low *S*s	.28				

It is seen that high-achievers were significantly higher in number of affiliation and succorance motive responses given; i.e. high-achievers appear a bit more dependent upon the support of others. High-achievers also mention discipline problems more frequently than low-achievers. Finally, the number of scorable responses and number of words per protocol are higher for high-achievers, which may be related to their generally more compliant tendencies or to their slightly higher verbal IQ's.

TABLE 16

Summary of Findings from Tests

Present Study	Previous Study
California Psychological Inventory	California Test of Personality
High and aver-achievers higher on Do, Wb, Re, So, To, and high ach. higher than low on Sc. High, aver, and low-achievers in that order on Ac, Ai, Ie. High and aver. higher on Py & Fe. Hence, high-ach. were higher in ascendancy, socialization, and achievement. High-achievers have more feminine interest.	Low-achievers signif. higher in number of school and family probs. and lower in sense of pers. worth.
Factors interpreted are Mature striving, Ascendancy, Rebellion or Non-conformity, Masculinity vs Femininity, and Conventionality.	
Bills IAV	"A Self Test"
No statist. signif. dif. among groups, either scale.	No signif. difs. in high and low-achievers.
Card-sort (4 variables)	Card-sort (3 variables)
High and aver-achievers less non-conform. than low-achievers. High, aver, and low-achievers in that order as to autonomy or independence. High, aver, and low-ach. in that order as to achievement motive. Aver and low-ach. more affiliation oriented.	High and low-ach. equal on "non-conformity." High-ach. above low-ach. on achievement motive. High-achievers below low-ach. on affiliation motive. -
Dunn's Visual Discrimination Task (new)	
High-ach. had difficulty with neutral series, and with female as compar. to male figures. Low-ach. had no signif. diff. among stimuli.	Tests Not Used in Present Study Rotter Incomplete Sentences Blank. No signif. diffs. between groups.
10-card TAT (new) High-ach. signif. higher in parent identification.	Paired-Comparison Test of peer ident. regarding certain interest modes.
4-card McClelland Projective Task High-ach. higher in affiliation and succorance motives. Also higher in scorable responses & word count. High-ach. mentions more discipline problems in stories.	High-ach. more academic oriented. Low-ach. more mother-oriented.

9. Conclusions and Implications.

This study was undertaken with purposes in mind of attempting to confirm or refute findings of a previous study of non-intellective variables related to school achievement (32); to extend measures to a new and different sample; and to employ certain new measures in hopes of gaining greater understanding of the problem.

For the most part, the present study does, indeed, confirm the previous study. Summaries of findings are presented in Table 3 and Table 16, and the studies are compared. The conclusion of the previous study that father-identification is less in low-achievers is the main finding which was not substantiated in the present study, although it seems clear that low-achievers do not have as close ties with the home nor do they accept conventional values as much as do high-achievers. In general, the various measures tended to confirm each other in regard to variables measured in common.

The present study affords opportunity for more extensive analysis of the data, and this will be undertaken in the future. For example, regression analysis should be extended; this awaits completion of a "best fit" computer program, now being developed by the University of Wisconsin Numerical Analysis Laboratory. It also seems useful to examine within-group differences of high-, average, and low-achievers in relation to Taylor's remarks (38) and the fact that certain other studies found conflicting characteristics of bright achievers and low-achievers. It also seems desirable to examine more closely Ss who improved in gpa from 7th to 8th-grade, and those who showed gpa decrement. High-achievers whose CPI profiles resemble those of low-achievers, and vice versa, seem worthy of further study.

In general, it may be said that many of the findings concerning non-intellective characteristics of high- and low-achieving bright pupils have confirmed various studies. Allowing for individual differences and variation, it may be said that enough is now known concerning group characteristics so that preventive and remedial measures may be taken in regard to low-achievement. It is probably time for experimental studies attempting to modify certain characteristics to be undertaken, both in the laboratory and in the field.

In addition, certain attitudes held by both high- and low-achieving Ss suggest that the teacher and school image, the model-pupil image, the "good" student image, and certain other attitudes require study, and attempts should be made to modify values held in common by the majority of the peer group.

A number of implications for research and possible school practice have resulted from findings of this study and the previous research. Before discussing these, however, a reminder is issued concerning differences in these studies, some of which may have resulted in the few discrepant findings which have been discussed. In the previous study it was possible to hold socio-economic status and school comparability constant.

Ss in that study were matched for age, IQ, class load, sex, and environmental similarity. They were 9th-grade pupils, in contrast to the present Ss who were in 8th-grade. In the previous study certain instruments (e.g. paired-comparison identification test, CTP, Rotter Sentence Completion Blank) were employed which were not employed in the present study. In the present study it was not possible to control for school comparability and socio-economic background factors, and the sample therefore is a random sample of bright 8th-grade boys in the junior high schools of two Midwestern cities. New instruments (e.g. TAT, Dunn's task, McClelland's task, CPI, Bills IAV) were employed. The card-sort was extended, and some new interview questions were added. Finally, in the previous study Ss were divided into high- and low-achievers, whereas in the present study, Ss were divided into high-, average, and low-achievers. There were small but statistically significant differences in WISC FS and WISC V IQ's. There is advantage in comparing one sample with another since findings common to both studies permit broader generalizations; there is disadvantage in that sample differences may restrict the commonality of findings.

Differences found between high- and low-achievers are now summarized, with implications for research and school practice:

1. It is clear that bright junior high school boys have some notions of occupations for which they intend to prepare, but these notions are not strongly based in acquaintanceship with the actual requirements for these occupations. Plans for preparing for these occupations are somewhat hazy, although one study showed that high-achievers are clearer about plans than are low-achievers. Occupational plans tend to the professions, which require college education. Implications for junior and senior high school choice of school subjects are apparent.

It may be noted that low-achievers tended more than high-achievers to enjoy shop and psysical education classes. Further, their low achievement in school did not presage success in attaining college entrance or completion. It may be said that for low-achievers, occupational goals are conventional but less realistic than for high-achievers.

Undoubtedly, a practical step for schools would be to attempt to discuss long-range plans with boys, even at this age, and to point out the feasability of low-achievers attaining their goals, assuming adequate effort was made. It would be worth research to discover the effects of this sort of counseling.

2. It is clear from a variety of evidence in both studies, especially from interview data, that low-achievers do not have as adequate parent relationships as do high-achievers. In the former study, it was found that father identification was a factor in low-achievement; although this was not confirmed in the present study, it was found that high-achievers tended to more concern for the home than low-achievers (Dunn's visual discrimination task, TAT). The quality of parent-child interaction is important, as well as the amount. In the present study, occupational plans were discussed with fathers by low-achievers about as frequently as by high-achievers; both groups expressed about the same

amount of admiration for their fathers; both groups had about the same amount of father-son activities. However, parents of high-achievers tended to reason, advise, or aid their sons when academic problems arose, and this was favorably accepted by the boys. On the other hand, more parents were punitive when marks were low, for the low-achievers. They succeeded in "motivating" their sons, but this tended to have a temporary, rather than lasting effect.

Implications for schools include parental counseling for parents of low-achievers in regard to the above. Research might center about the results of such parent counseling. There have been many parent-attitude studies made; whether practices in regard to recreation, counseling re occupations, and counseling re schools by parents have been adequately studied is open to conjecture. That is, parent activities, rather than attitudes or behavior modes, may be important to investigate further.

3. Low-achievers appear to have somewhat more masculine interests than do high-achievers. This was evident in the present study from the CPI, the CPI factor analysis, Dunn's visual discrimination task, and from results of the previous study. This notion may also be related to the fact that lower-achievers mentioned skilled labor occupational goals in a few instances, were interested more frequently in shop and physical education courses, and tend to reject the conforming model pupil definition.

This suggests that low-achievers might be afforded the opportunity for more "masculine" interests in school courses; it also suggests that they might profit from strongly masculine teachers, with whom they could identify, and from whom they might model academic achievement motivation.

Research implications might include experimentally varying low-achievers under male vs female teachers. More study needs to be done concerning the effect of the school on boys as compared to girls; it has been suggested that school is much more favorable to girls during elementary school years. Further, more needs to be done to determine whether low-achievers are actually more masculine than high-achievers, or whether high-achievers are simply more interested in certain school subjects and activities commonly attributed as feminine interests. If the difference is shown to exist in other psycho-sexual areas, might it be found that high-achievers need more masculine identification, and low-achievers more feminine identification? There may also be fruitfulness in studying the effects of the private school for boys in regard to this variable, achievement, and other personality attributes.

4. In regard to identification with school values, the two studies tend to confirm each other. In each case, arithmetic and science are best-liked academic subjects, and English (grammar)least liked. This is in keeping with known interests of boys as compared to girls, and with girls' presumed advantage in verbal skills. The activities of the class (e.g. science) may also be more interesting to boys than the relatively fewer psychomotor activities in English. Implications for class activities are present.

In regard to non-academic classes, music was least-liked by all groups. This is probably related to voice-change at adolescence, and to awkwardness in heterosexual activities where embarrassment may occur. That music *per se* is not the problem is evident, since band was not a least-liked subject. Again, curricular and methodology implications seem present.

Research in this area should center about experimental innovations which might help boys to identify with classes which they currently do not favor.

Ss in both studies see teachers as holding to the model pupil norms of conformity and docility. Few *Ss* feel that teachers desire intellectually lively pupils. In the previous study it was found that high-achievers approved this model but that low-achievers did not. In this study there were no significant differences between groups.

In characterizing themselves as more or less like the perceived pupil model, both studies showed that high-achievers believed themselves to compare favorably with the model, whereas low-achievers did not. High-achievers seem to care more about the teachers' views of them, suggesting greater identification with the teacher, possibly greater tendency to conform (borne out by CPI data), and a greater acceptance of school and adult models. Since this is the case, it can be expected that teachers would be able to provide more potent social reinforcements to high- than to low-achievers. Frankel (16) and Gowan (18), it was noted, found that lower-achievers provide more problem behavior to both parents and schools; similarly, the CTP in the previous study showed more school and home problems for low-achievers.

It would seem that teacher practices, and the image of the model-pupil conveyed by teachers, should be re-examined in the light of the above. Little reinforcement seems to be given for intellectual "liveliness" and considerable negative reinforcement is provided the pupil who is less willing to conform. In turn, negative pupil attitudes may be induced, and an intensification of the problem results.

Evidence from both studies shows that "good" students are admired as peers only if they also possess "nice personalities" or athletic prowess. Intellectual competency, by itself, seems to have little to do with peer group approval. In addition, both studies suggested that peer norms for academic achievement were those of mediocrity; most pupils were thought to do only enough work to "get by".

It was also noted that favorite teachers are more frequently chosen for personality attributes such as cheerfulness, kindliness, and humor, than for academic competence, although the previous study showed high-achievers mentioning the latter more frequently than low-achievers.

In substance, the above suggests that many pupils are unable to identify with the school, with the model pupil image as perceived, and that few find social reinforcement for intellectual competency, either from teachers or from peers.

Implications for school practice include finding of more ways to positively reinforce academic achievement than the marks and grades which now provide most of the incentives to learn. Privileges and honors should be provided. Real advantages--released time, opportunity to work on individual projects, opportunity to earn money in the school environs once achievement standards have been attained (e.g. working in the school office on released study time, supervising smaller children on the playground) and other reinforcements might be offered. Thus the achievement values might be enhanced among all students. However, a change in the marking policy might also be indicated, so that students' progress in relation to ability would be considered, rather than merely competitive marking against norms. This would permit all students to attain the advantages of working hard to achieve.

Research might include experimental manipulation of the reinforcement hierarchy offered by the school, which might be found viewed somewhat differently by various Ss. It should also be possible to research the need for conformity vs autonomy and possible creativity. The possibility of an even-more-individualized curriculum might be better realized within the school boundaries.

5. The previous study attacked the question of differences in emotional and social adjustment hypothesized between high- and low-achievers. The CTP showed that low-achievers were lower in sense of personal worth, had a nearly statistically significant tendency to "nervous symptoms", and had more problems with school and parents than did high-achievers.

The CPI, employed in the present study, does not assess personal adjustment except insofar as poise and ascendency are concerned; it was found that high-achievers were higher in this dimension than low-achievers in regard to 2 of the 6 CPI scales provided. Social adjustment is more extensively studied by the CPI. It was found that high-achievers were more socialized, tolerant, responsible, conventional, and self-controlled than low-achievers. They had a somewhat higher sense of well-being, and a better understanding of self and others (psychological-mindedness.)

However, measures of self acceptance used in both studies (IAV, "A Self Test") revealed no differences among groups.

The TAT and Dunn's task showed relatively little differences, except that high-achievers distinguished the mother stimulus figure less well than low-achievers on Dunn's task, which may suggest some anxiety of high-achievers re relations to their mothers; and TAT showed high-achievers to have more parent-identification. McClelland's task showed succorance, suggesting some dependency upon others. This, in combination with other findings, was considered dependency upon parents.

Thus there are differences in social adjustment and maturity, and in sense of well being and personal worth. Whether these are causes of effects, or whether there is significant interaction as to cause and effect cannot be stated from this study. It is probable, however, that poor adjustment leads to interpersonal difficulties, which in turn lead to negative emotions and further poor adjustment. At some point, this "vicious spiral" needs to be broken.

Social-learning theory suggests that behavior continues when reinforced, and does not continue when not reinforced or when negatively reinforced. It also suggests that imitation of others is a powerful factor in learning, and that people may imitate aggression, hostility, or other undesirable behaviors as well as those which are desirable. Thus the teacher (parent, or peer) who acts in a hostile, punitive, rejecting, or aggressive manner to the low-achieving may be simply arousing negative emotions in him and contributing to his undesirable behavior. The friendly, kindly, humorous teacher may arouse positive emotions, support identification of the boy with him and his values, and induce desirable behavior.

It is possible also, to attempt to help the low-achiever gain acceptance by high-achievers and popular pupils, instead of forcing him through rejection to band with other low-achievers who tend to reinforce his negative attitudes and behavior. For example, many school and non-school clubs seem geared only to the successful, conforming pupil. Those who most need the support, identification, and reinforcements of such organizations may be excluded from membership.

6. Achievement motivation was measured in several ways. Projective devices showed no differences among groups, but the CPI and card-sort of this study, and devices of the previous study confirm the notion that low-achievers have less motivation to achieve. This is, of course, related to lower ITSB and gpa scores.

The discussion of reinforcement,above,has already touched upon the question of achievement motivation. Some other possibilities may be mentioned here. For example, it is possible that low-achievers are not "anxious" enough to be sufficiently motivated. It is possible that they have achieved well enough to "get by" without extending their efforts to the fullest. It is also possible that they are in some way being reinforced for poor achievement, or that they are failing to receive reinforcement for efforts which they have made. They may have even received negative reinforcement in the form of ridicule, sarcasm, or other similar evaluations for their efforts. The competitive grading system, of course, tends to insure that low-achievers will receive relatively little positive evaluations from teachers, parents or fellow pupils insofar as academic achievement is concerned.

It may be important with some low-achievers to place more responsibility for their work more squarely in their own hands; the teacher might take less responsibility for pupil success or failure, and natural consequences might intervene for better or worse. Rather than urging, nagging, tutoring, or otherwise attempting to carry low-achievers along, the teacher may well take the attitude that he will assist only if the pupil genuinely seeks this assistance.

Equally, however, reinforcements for desirable efforts and for real achievements should be offered. Reinforcements may be offered for originality, creativity, thoughfulness, friendliness, and many other virtues other than academic achievement. Social reinforcement by the teacher may aid in identification with the teacher and school, acceptance of school values, enhanced sense of personal worth, and in other ways. Such should not be offered, however, unless the pupil makes some constructive efforts.

Research might center around the positive attributes of low-achievers, and how these may be capitalized upon. Study should be made of the teaching of responsibility, frustration tolerance, and of ways to legitimately improve feelings of self-worth for low-achievers.

7. Motive for affiliation was found in both studies to be more characteristic of low-achievers than of high-achievers. This was interpreted as motive to socialize with peers. Taylor (38) felt that this might be in the nature of an escape from academic pressures or disappointments. It might equally be felt that this is an attempt to gain support and some positive reinforcements from the peers which may be otherwise missing from the low-achiever's environment. On the other hand, low achievement might well be the result of a stronger motive to affiliate than to achieve.

This question has not been resolved. Further research concerning the nature of the affiliation motive and its effect should be made.

8. Independence was found in this study to be different from non-conformity, and more like autonomy. High-achievers were found independent and low-achievers non-conforming to a statistically-significant degree.

It should first be stated that independence or autonomy is usually considered a desirable characteristic; there are many writers who have been concerned with the extreme conformity and dependence which seems fostered in our society. The term "self-actualization" has been proposed as representing somewhat of an ideal, mature state.

Adolescence is considered as a time when the youth strives to "find himself" and struggles for a degree of autonomy. Literature in the past has referred to "adolescent rebellion" as an effect of this struggle for self-identity. It has been hypothesized that this period must be successfully worked-through in order that the dependent child may become the independent mature adult.

Later literature suggests that the struggle for autonomy is not merely a function of adolescence, but a continuing developmental feature, and that growth towards independence should be fostered throughout the child's developmental years.

For purposes of this study, and based upon findings of the previous study, the notion was held that junior high school years represent a period in which dependence upon parents (and teachers), hence conformity to their standards and values, is being replaced by more dependence and affiliation with peer group values. In turn, adult demands would bear less weight with the junior high school youth, resulting in non-conforming, possibly rebellious behavior. Low achievement might be one result. Disciplinary problems might be another.

What is implied is that movement towards independence or autonomy, and identification with peer values, is not only normal, but desirable. However, the manner of seeking independence is of concern. These high-achievers have accepted a socially-desirable manner of seeking autonomy, whereas low-achievers are employing socially undesirable, rebellious means.

School practice may need to consider helping low-achievers find useful ways of achieving indpendence. Efforts need to be made to teach responsibility, acceptance of the consequences of one's own actions, differentiation between non-conformity or rebellion and independence.

It would be useful to find many ways to help all youth make decisions for themselves, develop their own ways of achieving successes, and of doing these things in ways which society will reward. This is in opposition to dependency-furthering practices where advice is given, coercion is employed, decisions are made on group basis, and the individual is not encouraged to strike out on his own. Much research, both curricular and experimental, needs to be done in this area.

In substance this study has confirmed many prior findings of the previous study and of studies of others. It may be said that, granting individual differences, the low-achiever has been well characterized. It now seems desirable to attempt experimentation in the effort to promote more socialized, achievement-oriented behavior on the part of the low-achiever. A number of implications for school practice and for further research have been stated.

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Appendix A

Distribution of Ss by Schools N= 262

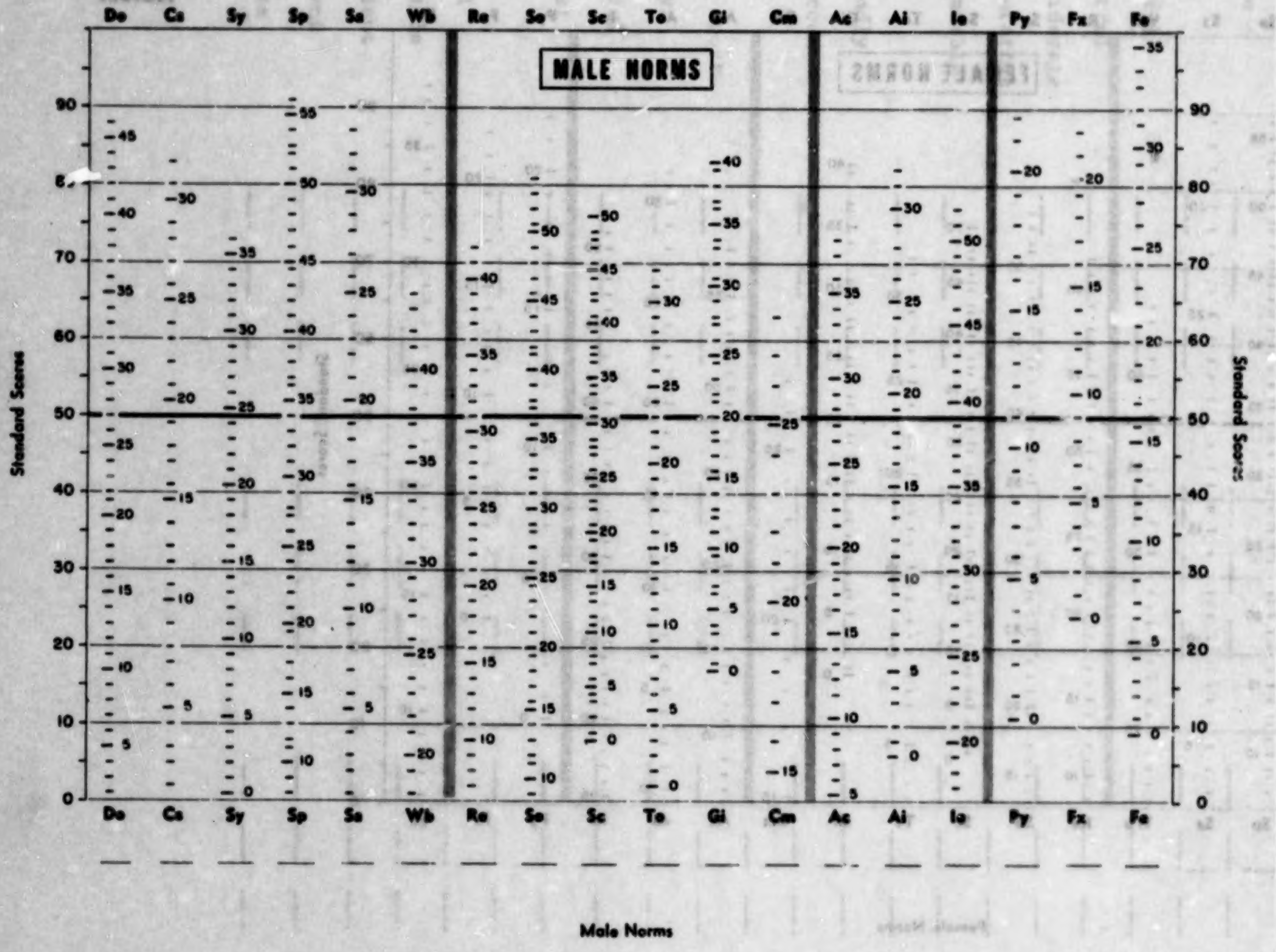
School	High-Achievers	Average-Achievers	Low-Achievers
J	5	6	5
Ch	11	19	10
E	5	6	2
V	22	13	15
W	4	11	15
S	5	5	4
L	8	5	7
M	3	2	3
C	3	1	5
F	5	0	2
Sc	3	3	11
O	5	6	3
Sh	9	9	6
	88	86	88

PROFILE SHEET FOR THE *California Psychological Inventory*: MALE

Name __________ Age __________ Date Tested __________

Other Information __________

Notes:



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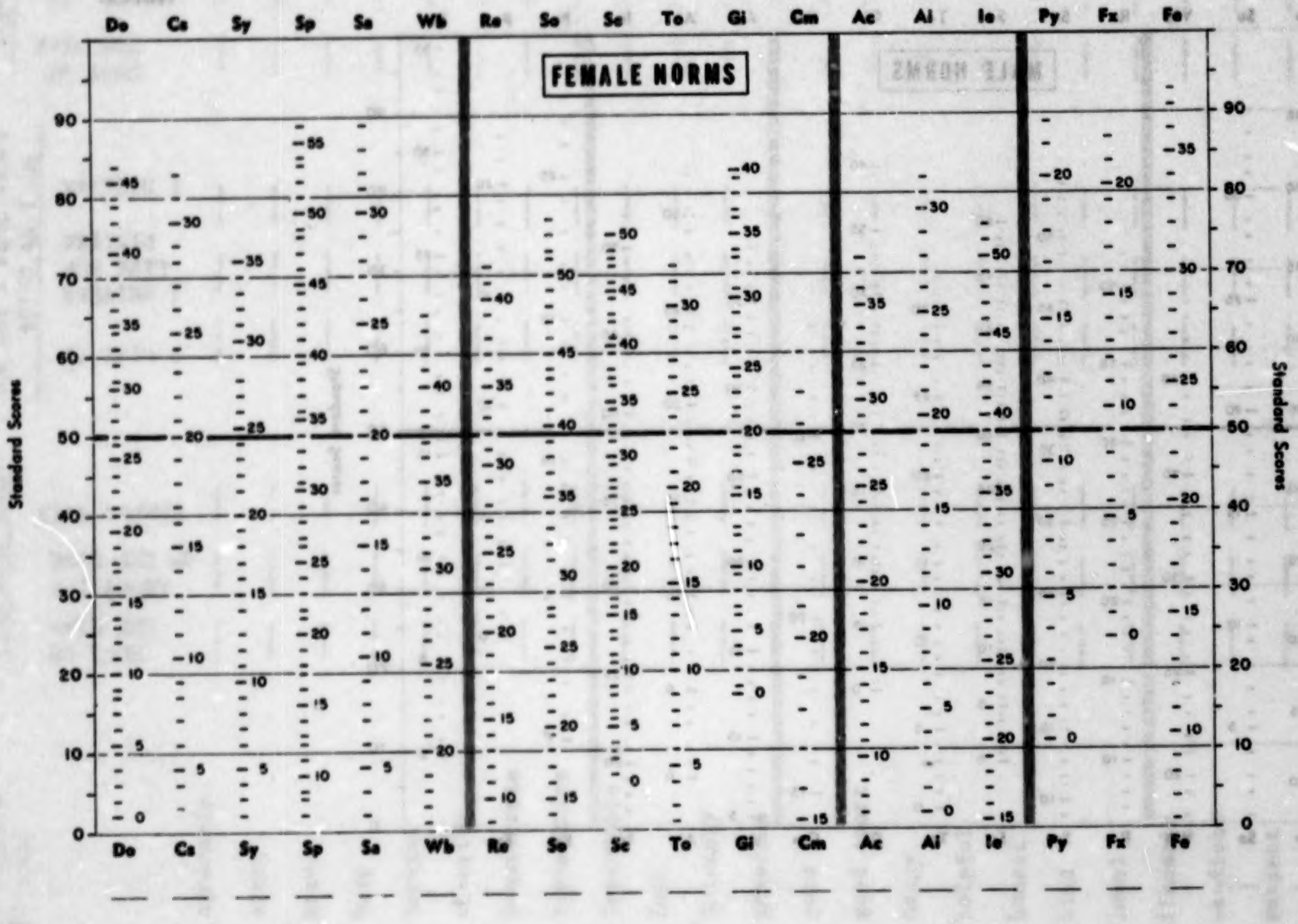
PROFILE SHEET FOR THE *California Psychological Inventory*: FEMALE

Name ______ Age ______ Date Tested ______

Other Information ______

Notes:



Female Norms

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IAV
Grades 6, 7, 8
"self" form

Appendix C

		I AM LIKE THIS			THE WAY I FEEL ABOUT BEING AS I AM			I WISH I WERE		
		MOST OF THE TIME	ABOUT 1/2 OF THE TIME	HARDLY EVER	I LIKE IT	I NEITHER LIKE NOR DISLIKE	I DISLIKE	MOST OF THE TIME	ABOUT 1/2 OF THE TIME	HARDLY EVER
1.	agreeable									
2.	alert									
3.	brave									
4.	busy									
5.	careful									
6.	cheerful									
7.	considerate									
8.	cooperative									
9.	dependable									
10.	fair									
11.	friendly									
12.	generous									
13.	good									
14.	good sport									
15.	happy									
16.	helpful									
17.	honest									
18.	kind									
19.	loyal									
20.	likeable									
21.	obedient									
22.	patient									
23.	polite									

(Cont.)
IAV
Grades 6, 7, 8
"Self" form

	I AM LIKE THIS			THE WAY I FEEL ABOUT BEING AS I AM			I WISH I WERE		
	MOST OF THE TIME	ABOUT 1/2 OF THE TIME	HARDLY EVER	I LIKE IT	I NEITHER LIKE NOR DISLIKE	I DISLIKE	MOST OF THE TIME	ABOUT 1/2 OF THE TIME	HARDLY EVER
24. Popular	___	___	___	___	___	___	___	___	___
25. quiet	___	___	___	___	___	___	___	___	___
26. reliable	___	___	___	___	___	___	___	___	___
27. sincere	___	___	___	___	___	___	___	___	___
28. smart	___	___	___	___	___	___	___	___	___
29. studious	___	___	___	___	___	___	___	___	___
30. successful	___	___	___	___	___	___	___	___	___
31. thoughtful	___	___	___	___	___	___	___	___	___
32. trustworthy	___	___	___	___	___	___	___	___	___
33. understanding	___	___	___	___	___	___	___	___	___
34. unselfish	___	___	___	___	___	___	___	___	___
35. useful	___	___	___	___	___	___	___	___	___

Appendix D

STUDENT INTERVIEW

At time of interview, look up G.P.A. - Figure it on A=4, B=3, C=2, D=1, F=0, for both semesters 1963-4 cn academic subjects only. Note any honors courses; note number of academic classes per semester.

Safeguards:

Look up cumulative record before interview, to ascertain whether boy lives with both parents, etc. If the father is absent, omit questions about father. (12-24) ("Who's in your family?" or "Who's at home?")

Try to keep S at ease. You may probe for further information, and for clarity - but don't press." If boy is uncomfortable, be careful - not only question of public relations, but of spoiling rapport or raising anxieties. Employ friendliness and sense of humor.

Don't talk about the boys. Interview data are confidential. If interview questions get noised about, it will be because the S, themselves, have talked (and they will). This is O.K., but we won't talk.

Keep away from probing home life. Stick to the questions.

Introductory remarks.

(After seeking friendly rapport) "I am going to ask you some questions which I hope you will answer. I would prefer you not answer at all, rather than give wrong or misleading anwers. You do not have to answer any questions you do not wish to. If you do anwer, your remarks will be used only for our research. Your answers will not be placed in the school files, nor told to anyone else. As far as we are concerned, this interview is completely confidential. The reason I am saying this is because I will ask you how you feel about some things in school, and I do not want you to worry about your anwers getting back to teachers or counselors or anybody. OK?"

INTERVIEW QUESTIONS

1. What job would you like to have when you have finished school? Have you thought about it at all?

2. (If any occupational aspirations) What it is it about this job that you would like?

3. Where did you get the idea that you would like to be a____________?

4. What sort of things does a ________________do?

5. Have you ever done any of those things?

6. Do you know anybody who is a _______________?

7. Who has helped you most in thinking about a job?

8. Is this the job that you really expect to do?

9. (If YES) How sure are you?

10. How do you plan to prepare for this job?

11. (If NO) Why don't you think you'll be able to do what you most want to do, that is, be a ____________________?

12. What does your father do?

13. Does he ever talk about his job at home?

14. Has he ever talked with you about what you might do when you are ready to go to work?

15. Does he do things with you on the week end? or during the week?

16. What do you do together?

17. About how often?

18. What does your father do in his free time?

19. How far did your father go in school?

20. How close are you to your father?

21. What is there about him that you admire most?

22. Would you like to be like him when you are an adult?

23. What subject do you like best in school?

24. What is it about _______________ that you like?

25. What subject do you like least, or dislike most?

26. What do you dislike about it?

27. Do you think it is important to study hard in school?

28. Why?

29. Do you think what you do in school now will make any difference to you in later life?

30. Is it important for you to get good grades in school?

31. Do you learn anything in school that's going to help you to be a______?

32. What kind of boys do your teachers like to have in class?

33. How do they want boys to act?

34. Do you like boys like that?

35. Are you that kind of boy yourself?

36. What do you think your teachers think of you?

37. How much does it matter to you --- a lot, some, or not much?

38. Are you friendly with any particular teacher?

39. Tell me about him or her. What sort of person is he?

40. What do you like about him?

41. What kind of boys are most popular in school here?

42. What's more important for being popular here, being a good athlete, a good student, or having a nice personality?

43. Do most of the boys admire a person who is a good student, or do they think good students are "square"?

44. How would you rate yourself? Are you popular with the boys?

45. Of all the boys you know, who do you admire most? Who would you like to be like? Tell me about him.

46. How do most of the boys here feel about school work---do most do just what they have to do to get by, or do most of them work as hard as they can?

47. What happens if you don't do well in your school work -- does somebody mention it to you?

48. Who? What do they say?

49. How does that affect you?

50. Are you happy with your school marks?

51. Who or what is to blame?

52. Tell me about any clubs or activities you are in. Do you have any leadership responsibilities?

53. What jobs out of school have you held?

54. What do you do for recreation? 55. Do you like boy-girl parties or dates?

"Are there any questions you would like to ask me?"
Thank S̲ for his help. "See you later."

Appendix E

Card-sort Items

Non-conformity

I frequently run counter (against) to the crowd.

I care relatively little about my reputation.

I do not particularly like conventional people.
(people who don't like to be too different)

I want to ignore advice.

I am a non-conformist. (conformist means to go along with the crowd, therefore, a non-conformist is independent- thinks for himself)

I like to do things which shock people.

I often state extreme ideas just to tease others.

I sympathize with non-conformists.

I like to be considered "different" by others.

I like to wear unusual hair styles.

My values are somewhat different from those of others.

People who interfere with what I am doing bother me.

I am critical when considering ideas of others.

Some of my interests and attitudes may seem a little odd.

I like to know strange or "different" people.

I take issue with (challenge) many rules or regulations.

I tend to resent suggestions about my dress or manners.

Most people act too much like a herd of sheep, I think.

I do things which others are afraid to do because of public opinion.

I am something of a rebel.

Independence

I prefer to trust my own judgement, rather than that of most others.

I admire independent people.

I am able to withstand criticism.

I stand up for what I think, even if this makes me unpopular.

I like to evaluate my work by my own standards.

I rarely need suggestions of how to spend my time.

What one does is important, as well as why he does it.

I believe that most people conform too much to group ideas.
(go along)

I tend to make most of my own decisions.

If I feel that I am right, I may be a dissenter (disagree).

I like to form my own opinions.

I do not depend upon approval of others for satisfaction.

I have many interests which I follow "on my own".

I like to proceed independently.

Others seem more dependent than I.

I like to be free to work out my own projects.

I think I am independent in most things.

My ideas are better for me than are those of others.

I hate to be told how to do a job.

I do not like being told what to think.

Achievement Motive

I am interested in other people's ideas.

I want very much to succeed in school.

One's school work is more important than his social life.

I like to study.

There are few subjects in school that I really dislike.

My school marks usually please me.

I hope to go on to college.

I like to learn new things.

I would like to be respected as a scholar.

I have interest in several school subject areas.

I care more about my actual school success than what others think of me.

I am not content with average school marks.

My teachers think well of me.

I try to do my best in my studies.

My friends are usually successful students.

I sometimes study more than the teachers demand of me.

I have won awards or recognition for my academic success.

I blame myself if my marks are not up to my standards.

I study hard even on subjects which bore me.

I have passed up recreation in order to do necessary studying.

Affiliation motive

I enjoy myself most when I am with other people.

I care a great deal what other people think of me.

I have many friends.

Clubs, teams, and other organizations are important in my life.

I like to attend parties, dances, and get-togethers

I have one or more intimate (very close) companions.

I spend very little time by myself.

Most people are friendly to me.

I usually keep my friends for a long time.

I like to meet new people.

I feel "at home" with most people.

I try to help others have a good time.

I am happiest when other people are around.

I like to go along with the ideas of the typical student.

I do not do many things that others would not do.

I use the language that my crowd uses.

My manners are like those of my best friends.

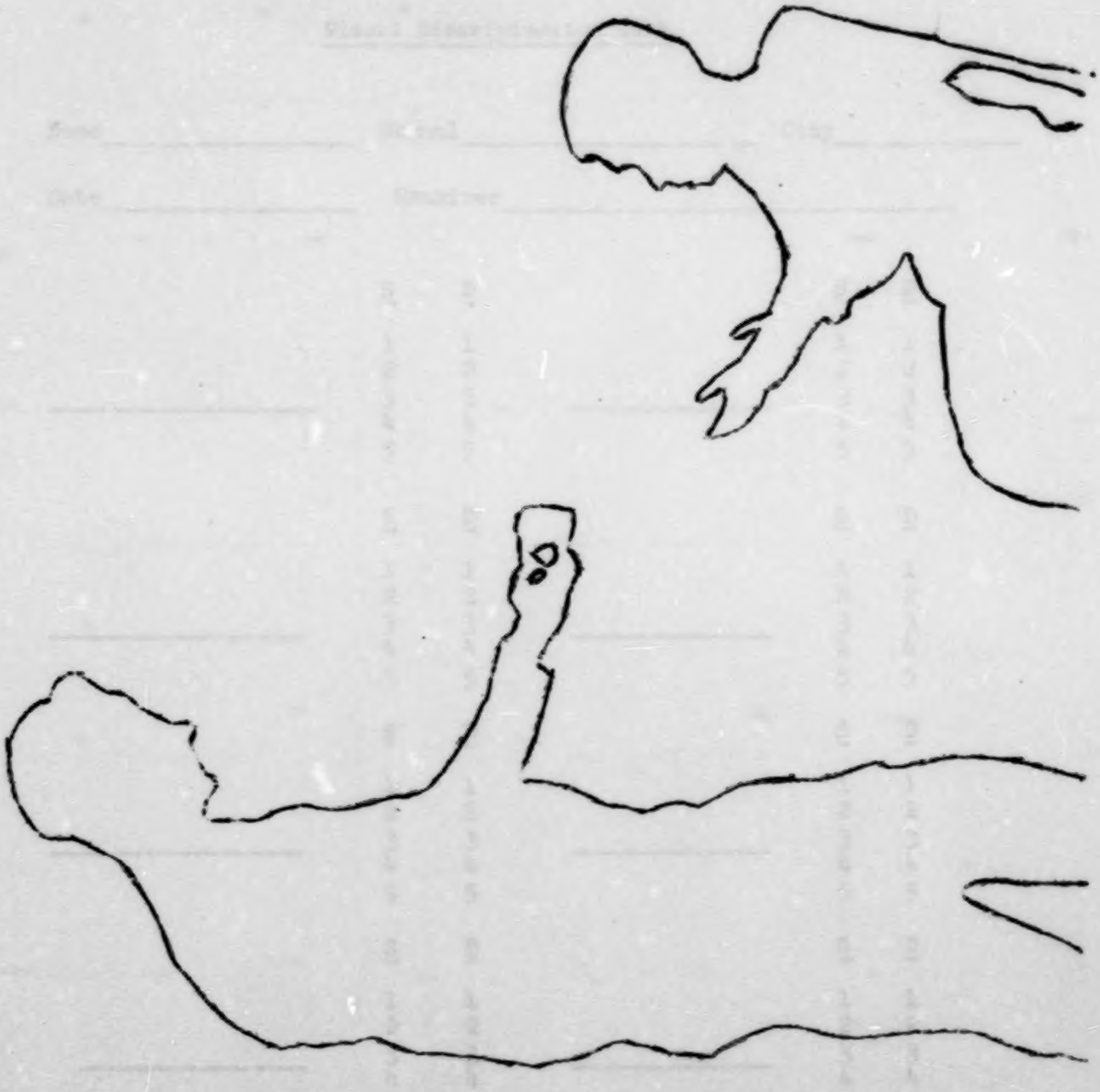
I want to be as my friends would like me to be.

- I depend very little upon others for ideas.

- I may wear clothes which others consider inappropriate.

Appendix F

SAMPLE STIMULUS, ADAPTATION OF DUNN'S VISUAL DISCRIMINATION TASK



Appendix G

Visual Discrimination Task

Name______________ **School**______________ **City**______________

Date______________ **Examiner**______________

	S	D		S	D
	1	1		1	1
	2	2		2	2
______________	3	3	______________	3	3
	4	4		4	4
	5	5		5	5

	S	D		S	D
	1	1		1	1
	2	2		2	2
______________	3	3	______________	3	3
	4	4		4	4
	5	5		5	5

	S	D		S	D
	1	1		1	1
	2	2		2	2
______________	3	3	______________	3	3
	4	4		4	4
	5	5		5	5

	S	D		S	D
	1	1		1	1
	2	2		2	2
______________	3	3	______________	3	3
	4	4		4	4
	5	5		5	5

	S	D		S	D
	1	1		1	1
	2	2		2	2
______________	3	3	______________	3	3
	4	4		4	4
	5	5		5	5

Appendix G_1

Visual Discrimination Task **Key**

Name______________________ School__________________ City____________

Date ____________________ Examiner______________________________

	S	D	Var.		S	D	Var.
______________	1	1	N5	______________	1	1	N5
	2	2	N2		2	2	N2
	3	3	N3		3	3	N3
	4	4	N1		4	4	N1
	5	5	N4		5	5	N4

	S	D	Var.		S	D	Var.
male, threatening	1	1	1	male, threatening	1	1	5
	2	2	2		2	2	3
	3	3	3		3	3	2
	4	4	4		4	4	1
	5	5	5		5	5	4

	S	D	Var.		S	D	Var.
male, nurturing	1	1	1	male, nurturing	1	1	3
	2	2	2		2	2	2
	3	3	3		3	3	1
	4	4	4		4	4	5
	5	5	5		5	5	4

	S	D	Var.		S	D	Var.
female, thr.	1	1	1	female, thr.	1	1	4
	2	2	2		2	2	1
	3	3	3		3	3	2
	4	4	4		4	4	3
	5	5	5		5	5	5

	S	D	Var.		S	D	Var.
female, nurt.	1	1	1	female, nurt.	1	1	2
	2	2	2		2	2	5
	3	3	3		3	3	1
	4	4	4		4	4	3
	5	5	5		5	5	4

Appendix H

TAT Score sheets

Subject No.______________ Story No.______________

TAT Scoring Sheet
Study of Bright Boys

ADJUSTMENT

	Positive	Negative
Self esteem	______________	______________
Security	______________	______________
Aggression-hostility	______________	______________
Withdrawing	______________	______________
Anxiety, conflict, Frustration	______________	______________
TOTAL ADJUSTMENT	______________	______________
IDENTIFICATION W/ADULT VALUES	______________	______________
PARENT IDENTIFICATION	______________	______________
HETEROSEXUAL INTERESTS	______________	______________

	Self-esteem		Security		Persevering vs. Withdrawing		Aggres-siveness	Frus-tra-tion	Con-flict	Anx-iety	Guilt	Adult Values		Parent Ident.		Heterosex. Interests	
	+	-	+	-	+	-						+	-	+	-	+	-
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Appendix I

Scoring System---10-card TAT's

+	-
SELF-ESTEEM	
mention of success optimism re outcome of striving high evaluation of hero confidence expectation of success accomplishment	negative evaluation of hero (incapable) pessimism re outcome of hero's striving devaluation of hero hero devalues self
SECURITY	
belongingness nurturance by others loyalty, group feeling hero as a group member or leader strong friendships family solidarity	hero isolated, rejected, disliked hero treated punitively (unjustly) loneliness desire for nurturance ungratified
PERSERVERING vs WITHDRAWING	
perservering attempt to cope with situation	refusal to tell story or involve self running away from situation daydreaming, sleeping retreat rejection of other's approaches
IDENTIFICATION W/ADULT VALUES	
complies with adults' requests positive mention of morality politeness; honesty consideration of others foresight	unwilling compliance refusal to comply devaluation of adults in pictures
PARENT IDENTIFICATION	
suggestion of modeling after, learning from, wanting to be with, love for parents, favorable description of parents.	mention of desire not to be like parent; desire for parent to be different; specific characterization of parent in negative sense. differs from Adult Values in that it refers to the person per se, rather than adults in general.

HETEROSEXUAL INTERESTS

+	-
mention of dating, marriage ascribing good motives or feelings to female figures favorable description of female figures or role in girls or young women (as opposed to mother figures or parent surrogates)	negative mention of girls or young women, misconstruing sex of characters, ignoring young women or girls, evidence of too close relationship to boys or man (suggestion of sexual nature)

(SCORED "PRESENT"OR "ABSENT")

ANXIETY:

tenseness, worry
psychosomatic
threat
fear
depression
pain
death

CONFLICT:

doubt
ambivalence
unresolved alternatives

---

argument

FRUSTRATION:

evidence of frustration of needs
impatience
anger at situation

GUILT:

deserved punishment
guilt
atonement
confession of hero

AGGRESSION:

mention of hero as angry
acting out
negative feelings about others
discussion of acting out hostility
negative mention of others

Appendix J

Interview Data for Academically Successful and Unsuccessful Ninth-Grade Bright Boys (33)

	Success Group	Unsuccessful Group
Occupational Ambitions		
1. Hoped-for occupation.		
Literary and arts		5
Law and politics	7	3
Medical	4	1
Social sciences		
Mathematics		
Biological sciences	3	1
Natural sciences	1	
Engineering	3	8
Architecture	2	1
General professional		1
Air pilot	1	
Technician		1
Teaching (non college)	1	2
Professional athletics		1
Public servant	1	
Executive	1	1
Not known	6	5
2. Reasons for choice of occupation.		
Working with people	1	
Working with things	4	6
Employing one's talents	4	7
Being creative	2	3
Income	4	2
Security	1	
Moral (helping others)	4	
Independence (own boss)	1	2
Excitement, adventure	3	3
NEC		
DK, none	6	7
3. Source of occupational aspiration.		
Father	5	8
Mother		
Teacher	6	7
Other adult	5	5
Peer		1
NEC	8	3
DK	6	6
NA		
4. Occupational information.		
Accurate, definite		
Generally acquainted	17	17
Fuzzy, not cognizant	6	5
NEC		
DK	7	8
NA		

	Success Group	Unsuccessful Group
5. Personal experience with occup.-like duties.		
Considerable, relative	1	1
Considerable, remote	4	1
Some	9	10
Very little	4	5
None (DK)	12	12
NEC		1
NA		
6. Role Model.		
Father	3	9
Teacher	2	1
Adult-acquainted	12	6
Adult-not acquainted	1	
None (DK)	12	2
NEC		2
NA		
7. Discussant about occupational choice.		
Father	13	13
Teacher	4	2
Adult- acquainted	3	3
Adult- not acquainted	9	12
NEC	1	
NA		
8. Certainty of occupational choice.		
Positive	11	7
Fairly sure, would like	11	8
Uncertain	8	14
NA		1
9. Plans for preparation for occupation.		
Realistic	16	9
Vague	6	12
Unrealistic, DK	2	5
NA	6	4

Identification with Father.

	Achievers	Non-Achievers
12. Father's occupation		
Executive	3	3
Literature, arts	1	
Law, politics	3	2
Medical	1	3
Engineering	3	2
General professional		1
College teaching (NEC)	2	
College teaching (human.)	1	1

	Achievers	Non-Achievers
Educ. Administration		1
Contractor		2
Broker	3	
Wholesale bus. owner		2
Retail bus. owner	4	2
Merchant (NEC)		2
Craftsman		1
Air pilot		1
Salesman, product	3	
Salesman, non-product	1	4
Public servant		1
Unskilled		1
Skilled	1	
Not known	3	2
15. Father's interest in his job, made known at home.		
Enthused	5	2
Satisfied	15	19
Doesn't discuss	6	6
Disapproves		2
NEC	4	1
16. Occupational counseling of father with subject.		
Strong support	3	2
Approval	11	14
DK, doesn't discuss	12	7
Indifference		4
NEC	4	2
NA		1
17-19. Frequency of father-son activities.		
Weekends or oftener	19	11
2 or 3 per month	3	2
once per month or less	3	10
never	1	3
NA, DK, NEC	4	4
22-24. Identification with father.		
Strong admiration	16	13
Admir. with reservations	8	7
Not close	2	5
Desire to be different		2
Strong negative		
NEC		1
Not determinable	4	2

	Achievers	Non-Achievers
School Identification		
25-26. Subject most liked.		
Science	11	3
Arithmetic(prob. solv.)		
Arithmetic (comput.)	8	8
Spelling		
Language, grammar		
Rdg., Literature	2	1
Foreign language	2	1
Soc. studies, history	3	4
Art, music	1	4
Shop	1	5
Phys. educ.		4
NEC	2	
27-28. Subject most disliked.		
Science	1	4
Arithmetic (prob. solv.)		
Arithmetic (comput.)	3	4
Spelling		
Language, grammar	10	11
Rdg., literature		
Foreign language	2	3
Soc. studies, history	3	7
Art, music		
Shop	2	
Phys. educ.	7	1
DK, none	2	
29-31. Values of school.		
Not important to future		1
Educational, occupat. prep.	23	22
Parental approval		
Teacher approval		2
Peer approval	1	
Social responsibilities		
Develop talents	6	4
Intrinsic interest in subj.		1
NEC		
Inter. exp.		
33. Values of present schooling in prep. for vocation.		
Yes, valuable	20	19
No, not valuable	3	3
Not available	7	8

	Achievers	Non-Achievers
Identification with Teacher		
34-35. Perceived teacher norms for pupils.		
Conformity, docility	15	14
Social competence		2
Academic competence	8	9
Intellectual liveliness	6	5
NEC		
DK	1	
36. Attitude of subject toward teacher model of pupils.		
Approve	19	10
Indifferent	3	15
Dislike	7	4
NEC		
DK	1	1
Not avail.		
37. Characterization of self with model.		
Much like model, cares	10	2
Some like model, cares	15	8
Little like model, cares		6
Not like model, cares	2	
Not like model, indifferent	1	8
Not like model, doesn't care		5
DK	2	1
NA		
38-39. Teacher opinion of subject (perceived by S)		
Good, cares	8	3
Indiff., cares	10	6
Negative, cares	2	6
Good, doesn't care	1	2
Indiffer, doesn't care	2	5
Negative, doesn't care	2	4
DK	5	3
NA		
40-42. Attributes of favorite teacher.		
No favorite teacher	4	5
Fairness, impartial	5	5
Kind, cheerful, etc.	8	16
Athletic	1	
Academic competence	12	2
NEC		
DK		2

	Achievers	Non-Achievers
Peer Relations.		
43-44. Characteristics of popular boys.		
Athletic	7	7
Scholarship	2	2
Personality	14	15
Family,status		
Dress, fads		
Popular with girls	2	
Non-conformist	5	6
NEC		
DK, refused		
45. Attitude toward "good students", of peers, perceived by S.		
Admired	16	5
Indifferent	11	15
Square, negative	2	10
NEC		
DK, refused		
46. S's estimate of own popularity.		
Very popular	7	6
Average	15	15
Not very	4	4
DK, refused	4	5
47. Characteristics of admired peer.		
Athletic	5	6
Scholarship	3	3
Personality	11	5
Family, status		
Dress, fads	10	5
Popular with girls		1
Non-conformist		1
No admired peer	10	
DK, refused	1	4
48. General peer attitude toward school task.		
Interested, work hard	2	2
Disinterested, work hard	9	9
Disinterested, work little	19	19
Dislike, but work		
Dislike, don't work		
NEC		
DK		

	Achievers	Non-Achievers
Attitudes Toward Self.		
49. Pleasant stimuli recently experience.		
Academic	7	6
Athletic	6	4
Social	9	10
Family	2	1
Other	2	3
DK	4	6
50. Outstanding wishes.		
Academic	5	6
Athletic	2	1
Social	6	5
Family	1	
Other	6	1
DK	11	16
51. Recent unpleasant stimuli.		
Academic	8	6
Athletic	1	1
Social	6	2
Family	3	5
Other	7	2
DK	5	14
School Achievement and Attitudes		
54. Home counselor re poor achievement at school.		
Father	2	5
Mother	10	11
Mother and father	13	13
Other	1	
None	4	1
55. Attitude of parent re poor achievement.		
Urge, advise, reason	18	12
Verbal punishment	7	11
Deprivation of privileges		3
Aid, help	1	3
Does not apply	4	1
56. Results of parental attitude about poor achievement.		
Positive, motivate	20	27
Neutral	5	1
Negative	1	1
Does not apply	4	1

	Achievers	Non-achievers
57. Reasons for poor achievement by bright boys.		
Lack of motivation	10	10
Social life, compet. int.	7	7
Family problems	5	4
Emotional disturbance	1	1
"lazy"	5	4
Other	2	4
58. Subject's satisfaction with his marks.		
Very	21	4
Quite	5	4
So-so	3	10
Not very		4
Not at all		7
DK	1	1
59. Source of academic problems and poor marks.		
Self	4	20
School		1
DK		9
Does not apply	26	

Appendix K

INTERCORRELATIONS OF TEST DATA: TOTAL, HIGH, AVERAGE, LOW GROUPS

Legend

Variable

1 = WISC Full Scale
2 = WISC Verbal Scale
3 = WISC Performance Scale
4 = Iow Test Basic Skills
5 = 7th Grade GPA
6 = 8th Grade GPA
7 = Average GPA
8 = Cal. Psych. Inventory - Dominance
9 = " " " - Capacity for Status
10 = " " " - Sociability
11 = " " " - Social Presence
12 = " " " - Self-Acceptance
13 = " " " - Well-being
14 = " " " - Responsibility
15 = " " " - Socialization
16 = " " " - Self Control
17 = " " " - Tolerance
18 = " " " - Good Impression
19 = " " " - Communality
20 = " " " - Achievement via Conformity
21 = " " " - Achievement via Independence
22 = " " " - Intellectual Efficiency
23 = " " " - Psychological Mindedness
24 = " " " - Flexibility
25 = " " " - Femininity
26 = Bills IAV - Self-Acceptance
27 (-) = " " - Discrepancy I, III
28 (-) = Card-sort - Non-conformity
29 (-) = " " - Independence
30 (-) = " " - Achievement motive
31 (-) = " " - Affiliation motive.

27-31 Negative. High score means low on attribute measured.

Appendix K

INTERCORRELATION - TOTAL SAMPLE - ALL VARIABLES

	Var. 1	Var. 2	Var. 3	Var. 4	Var. 5
Var. 1	1.0000	.7816	.6961	.4960	.2931
Var. 2	.7816*	1.0000	.1042	.6150	.3655
Var. 3	.6961*	.1042	1.0000	.0905	.0508
Var. 4	.4960*	.6150*	.0905	1.0000	.6238
Var. 5	.2931*	.3655*	.0508	.6238*	1.0000
Var. 6	.3529*	.4158*	.0839	.6908*	.7398*
Var. 7	.3577*	.4372*	.0708	.5866*	.7847*
Var. 8	.1169	.1744	- .0049	.2215	.1253
Var. 9	.0137	.1352	- .1177	.1903	.0355
Var. 10	- .0570	- .0117	- .0679	.0554	-.0684
Var. 11	- .1056	- .0225	- .1361	.0920	-.0822
Var. 12	- .0696	.0207	- .1256	.0923	.0314
Var. 13	.0956	.1301	.0107	.3213*	.1903
Var. 14	.2950*	.3132*	.1151	.4145*	.3588*
Var. 15	.0990	.1264	.0199	.2696	.3427*
Var. 16	.0860	.0568	.0717	.1453	.2395
Var. 17	.2061	.2204	.0778	.3406*	.2526
Var. 18	.0193	- .0090	.0426	.0101	.1039
Var. 19	.1485	.1922	.0173	.3521*	.2198
Var. 20	.1409	.2099	- .0060	.3299*	.3590*
Var. 21	.1856	.2733	- .0103	.4019*	.3078*
Var. 22	.1956	.2966*	- .0183	.4281*	.3066*
Var. 23	.1006	.1509	- .0101	.1610	.0856
Var. 24	.0345	.0306	.0263	.0464	- .0153
Var. 25	.0910	.1373	- .0163	.1269	.2585
Var. 26	- .1399	- .1176	- .0961	- .0518	- .0381
Var. 27	.1515	.1302	.0901	- .0170	- .0357
Var. 28	.0788	.0925	.0125	.1327	.2555
Var. 29	- .1600	- .1761	- .0498	- .1721	- .0652
Var. 30	- .1182	- .1778	.0129	- .2975*	- .3991*
Var. 31	.1358	.1848	.0063	.2410	.1693

INTERCORRELATION - TOTAL SAMPLE - ALL VARIABLES

	Var. 6	Var. 7	Var. 8	Var. 9	Var. 10
Var. 1	.3529	.3577	.1169	.0137	- .0570
Var. 2	.4158	.4372	.1744	.1352	- .0117
Var. 3	.0839	.0708	- .0049	- .1177	- .0679
Var. 4	.6908	.5866	.2215	.1903	.0554
Var. 5	.7398	.7847	.1253	.0355	- .0684
Var. 6	1.0000	.7730	.1545	.0446	- .0267
Var. 7	.7730*	1.0000	.1457	.0471	.0290
Var. 8	.1545	.1457	1.0000	.4669	.6582
Var. 9	.0446	.0471	.4669*	1.0000	.4953
Var. 10	- .0267	.0290	.6582*	.4953*	1.0000
Var. 11	- .0409	- .0248	.4138*	.3602*	.6067*
Var. 12	.0485	.1005	.5841*	.3388*	.6535*
Var. 13	.2802	.2010	.3456*	.3115*	.2694
Var. 14	.4017*	.3494*	.2861	.2791	.0945
Var. 15	.3757*	.3645*	.2114	.1687	.1103
Var. 16	.1955	.2030	.0248	.2977	- .0707
Var. 17	.2439	.2051	.3212*	.5306*	.2580
Var. 18	.0816	.0862	.1750	.3931*	.1636
Var. 19	.2792	.2489	.1934	- .0119	.1757
Var. 20	.3543*	.3432*	.4242*	.3552*	.2618
Var. 21	.3097*	.2546	.1408	.4691*	.1135
Var. 22	.3630*	.3099*	.4202*	.5401*	.3596*
Var. 23	.1082	.1292	.2867	.3636*	.2269
Var. 24	- .0919	- .1467	- .0435	.1269	- .0407
Var. 25	.2411	.1723	- .1153	- .0212	- .2148
Var. 26	- .0276	- .0108	.2039	.1117	.2674
Var. 27	- .0516	- .0463	- .3155*	- .1534	- .3120*
Var. 28	.2352	.3022*	.0776	- .0035	.1079
Var. 29	- .1142	- .1079	- .0093	- .0084	.0998
Var. 30	- .3983*	- .3801*	- .0955	- .0082	.0654
Var. 31	.2163	.1409	- .0157	.0075	- .2507

INTERCORRELATION - TOTAL SAMPLE - ALL VARIABLES

	Var. 11	Var. 12	Var. 13	Var. 14	Var. 15
Var. 1	-.1056	-.0696	.0956	.2950	.0990
Var. 2	-.0225	.0207	.1301	.3132	.1264
Var. 3	-.1361	-.1256	.0107	.1151	.0199
Var. 4	.0920	.0923	.3213	.4145	.2696
Var. 5	-.0822	.0314	.1903	.3588	.3427
Var. 6	-.0409	.0485	.2802	.4017	.3757
Var. 7	-.0248	.1005	.2010	.3494	.3645
Var. 8	.4138	.5841	.3456	.2861	.2114
Var. 9	.3602	.3388	.3115	.2791	.1687
Var. 10	.6067	.6535	.2694	.0945	.1103
Var. 11	1.0000	.6094	.1464	- .1755	-.1158
Var. 12	.6094*	1.0000	.0411	- .0902	-.0420
Var. 13	.1464	.0411	1.0000	.5664	.6404
Var. 14	-.1755	-.0902	.5664*	1.0000	.6701
Var. 15	-.1158	-.0420	.6404*	.6701*	1.0000
Var. 16	-.2967*	-.2908*	.5758*	.6491*	.5985*
Var. 17	.1257	.0387	.6367*	.6040*	.4963*
Var. 18	-.1199	-.0517	.4498*	.4508*	.4098*
Var. 19	.1027	.0668	.5210*	.4445*	.5219*
Var. 20	.0265	.1515	.6387*	.6934*	.6713*
Var. 21	.0634	.0142	.4509*	.4980*	.3090*
Var. 22	.2522	.2187	.6561*	.5766*	.5245*
Var. 23	.1788	.1403	.2820	.2382	.1477
Var. 24	.1856	- .0253	-.0095	-.1352	-.2568
Var. 25	-.3494*	-.1999	-.0805	.2826	.1479
Var. 26	.1705	.1311	.1861	.0853	.1614
Var. 27	-.2326	-.2734	-.2689	-.1447	-.2443
Var. 28	-.0247	-.0296	.2885	.3644*	.3918*
Var. 29	.1085	.0542	-.0608	-.0570	.0592
Var. 30	.2014	.1324	-.3089*	-.5216*	-.4637*
Var. 31	-.2376	-.1235	.0153	.1584	-.0120

INTERCORRELATION - TOTAL SAMPLE - ALL VARIABLES

	Var. 16	Var. 17	Var. 18	Var. 19	Var. 20
Var. 1	.0860	.2061	.0193	.1485	.1409
Var. 2	.0568	.2204	-.0090	.1922	.2099
Var. 3	.0717	.0778	.0426	.0173	-.0060
Var. 4	.1453	.3406	.0101	.3521	.3299
Var. 5	.2395	.2526	.1039	.2198	.3590
Var. 6	.1955	.2439	.0816	.2792	.3543
Var. 7	.2030	.2051	.0862	.2489	.3432
Var. 8	.0248	.3212	.1750	.1934	.4242
Var. 9	.2977	.5306	.3931	-.0119	.3552
Var. 10	-.0707	.2580	.1636	.1757	.2618
Var. 11	-.2967	.1257	-.1199	.1027	.0265
Var. 12	-.2908	.0387	-.0517	.0668	.1515
Var. 13	.5758	.6367	.4498	.5210	.6387
Var. 14	.6491	.6040	.4508	.4445	.6934
Var. 15	.5985	.4963	.4098	.5219	.6713
Var. 16	1.0000	.6394	.7635	.0997	.6845
Var. 17	.6394*	1.0000	.5252	.2497	.6418
Var. 18	.7635*	.5252*	1.0000	-.0278	.5466
Var. 19	.0997	.2497	-.0278	1.0000	.3312
Var. 20	.6845*	.6418*	.5466*	.3312*	1.0000
Var. 21	.5432*	.6983*	.4041*	.1351	.5489*
Var. 22	.4427*	.6944*	.3106*	.3888*	.6234*
Var. 23	.3314*	.3738*	.3269*	-.0432	.3603*
Var. 24	-.1325	.0839	-.1307	-.1668	-.1598
Var. 25	.2196	.0461	.0930	-.0291	.2084
Var. 26	.0508	.0913	.1494	.0497	.1164
Var. 27	-.1902	-.1938	-.2314	-.0670	-.2874
Var. 28	.3286*	.2956	.2193	.3175*	.3836*
Var. 29	-.0321	-.0679	.0308	-.0007	.0327
Var. 30	-.4487*	-.2938	-.2589	-.2496	-.4890*
Var. 31	.1221	.0407	.0137	-.0930	.0542

INTERCORRELATION - TOTAL SAMPLE - ALL VARIABLES

	Var. 21	Var. 22	Var. 23	Var. 24	Var. 25
Var. 1	.1856	.1956	.1006	.0345	.0910
Var. 2	.2733	.2966	.1509	.0306	.1373
Var. 3	-.0103	-.0183	-.0101	.0263	-.0163
Var. 4	.4019	.4281	.1610	.0464	.1269
Var. 5	.3078	.3066	.0856	-.0153	.2585
Var. 6	.3097	.3630	.1082	-.0919	.2411
Var. 7	.2546	.3099	.1292	-.1467	.1723
Var. 8	.1408	.4202	.2867	-.0435	-.1153
Var. 9	.4691	.5401	.3636	.1269	-.0212
Var. 10	.1135	.3596	.2269	-.0407	-.2148
Var. 11	.0634	.2522	.1788	.1856	-.3494
Var. 12	.0142	.2187	.1403	-.0253	-.1999
Var. 13	.4509	.6561	.2820	-.0095	-.0805
Var. 14	.4980	.5766	.2382	-.1352	.2826
Var. 15	.3090	.5245	.1477	-.2568	.1479
Var. 16	.5432	.4427	.3314	-.1325	.2196
Var. 17	.6983	.6944	.3738	.0839	.0461
Var. 18	.4041	.3106	.3269	-.1307	.0930
Var. 19	.1351	.3888	-.0432	-.1668	-.0291
Var. 20	.5489	.6234	.3603	-.1598	.2084
Var. 21	1.0000	.6106	.2672	.1496	.1355
Var. 22	.6106*	1.0000	.2993	.0893	-.0006
Var. 23	.2672	.2993*	1.0000	.0429	-.0551
Var. 24	.1496	.0893	.0429	1.0000	-.0643
Var. 25	.1355	-.0006	-.0551	-.0643	1.0000
Var. 26	-.0157	.0889	.0790	-.0635	-.1145
Var. 27	-.1135	-.1699	-.1786	.0486	.0983
Var. 28	.1539	.2157	.0802	-.2074	.0698
Var. 29	-.1696	-.0874	-.1526	-.0933	.0529
Var. 30	-.2612	-.2346	-.1405	.2114	-.2213
Var. 31	.2122	.0607	.1471	.0432	.0868

INTERCORRELATION -TOTAL SAMPLE - ALL VARIABLES

	Var. 26	Var. 27	Var. 28	Var. 29	Var. 30
Var. 1	-.1399	.1515	.0788	-.1600	-.1182
Var. 2	-.1176	.1302	.0925	-.1761	-.1778
Var. 3	-.0961	.0901	.0125	-.0498	.0129
Var. 4	-.0518	-.0170	.1327	-.1721	-.2975
Var. 5	-.0381	-.0357	.2555	-.0652	-.3991
Var. 6	-.0276	-.0516	.2352	-.1142	-.3983
Var. 7	-.0108	-.0463	.3022	-.1079	-.3801
Var. 8	.2039	-.3155	.0776	-.0093	-.0955
Var. 9	.1117	-.1534	-.0035	-.0084	-.0082
Var. 10	.2674	-.3120	.1079	.0998	.0654
Var. 11	.1705	-.2326	-.0247	.1085	.2014
Var. 12	.1311	-.2734	-.0296	.0542	.1324
Var. 13	.1861	-.2689	.2885	-.0608	-.3089
Var. 14	.0853	-.1447	.3644	-.0570	-.5216
Var. 15	.1614	-.2443	.3918	.0592	-.4637
Var. 16	.0508	-.1902	.3286	-.0321	-.4487
Var. 17	.0913	-.1938	.2956	-.0679	-.2938
Var. 18	.1494	-.2314	.2193	.0308	-.2589
Var. 19	.0497	-.0670	.3175	-.0007	-.2496
Var. 20	.1164	-.2874	.3836	.0327	-.4890
Var. 21	-.0157	-.1135	.1539	-.1696	-.2612
Var. 22	.0889	-.1699	.2157	-.0874	-.2346
Var. 23	.0790	-.1786	.0802	-.1526	-.1405
Var. 24	-.0635	.0486	-.2074	-.0933	.2114
Var. 25	-.1145	.0983	.0698	.0529	-.2213
Var. 26	1.0000	-.4221	.2181	.0779	-.0223
Var. 27	-.4221*	1.0000	-.1693	.0583	.0759
Var. 28	.2181	-.1693	1.0000	.1044	-.5918
Var. 29	.0779	.0583	.1044	1.0000	-.1996
Var. 30	-.0223	.0759	-.5918*	-.1996	1.0000
Var. 31	-.2321	.0701	-.4042*	-.6053	-.1877

INTERCORRELATIONS - TOTAL SAMPLE -ALL VARIABLES

	Var. 31
Var. 1	.1358
Var. 2	.1848
Var. 3	.0063
Var. 4	.2410
Var. 5	.1693
Var. 6	.2163
Var. 7	.1409
Var. 8	-.0157
Var. 9	.0075
Var. 10	-.2507
Var. 11	-.2376
Var. 12	-.1235
Var. 13	.0153
Var. 14	.1584
Var. 15	-.0120
Var. 16	.1221
Var. 17	.0407
Var. 18	.0137
Var. 19	-.0930
Var. 20	.0542
Var. 21	.2122
Var. 22	.0607
Var. 23	.1471
Var. 24	.0432
Var. 25	.0868
Var. 26	-.2321
Var. 27	.0701
Var. 28	-.4042
Var. 29	-.6053
Var. 30	-.1877
Var. 31	1.0000

CORRELATION MATRIX - ALL VARIABLES - HIGH GROUP

	Var. 1	Var. 2	Var. 3	Var. 4	Var. 5
Var. 1	1.0000	.7679	.8271	.4666	.2211
Var. 2	.7679	1.0000	.2852	.4834	.1874
Var. 3	.8271	.2852	1.0000	.2955	.1726
Var. 4	.4666	.4834	.2955	1.0000	- .0104
Var. 5	.2211	.1874	.1726	- .0104	1.0000
Var. 6	.3374	.2740	.2535	.1695	.4160
Var. 7	.3418	.3433	.2035	.1149	.5791
Var. 8	.1728	.2114	.0922	.1060	.0868
Var. 9	- .0123	.0327	- .0176	.1891	- .0427
Var. 10	.0302	.0733	- .0076	.1631	- .1320
Var. 11	- .1267	- .0034	- .1642	.1747	- .2324
Var. 12	- .1096	- .0255	- .1350	.0339	- .1528
Var. 13	.1410	.0786	.1556	.1838	- .1361
Var. 14	.2792	.2877	.1564	.0919	.0288
Var. 15	.0618	.1264	- .0242	.0701	.1541
Var. 16	.0658	- .0105	.0972	- .0281	.0520
Var. 17	.1047	.0555	.1231	.2383	- .1972
Var. 18	- .0064	- .0477	.0277	- .0738	- .0739
Var. 19	.1090	.0850	.0837	.0723	- .0020
Var. 20	.0851	.1388	.0041	.0905	.0592
Var. 21	.0357	.0136	.0549	.2825	- .2376
Var. 22	.1521	.1226	.1481	.3372	- .0622
Var. 23	.0493	.1026	- .0026	.0971	.0073
Var. 24	- .0428	- .1074	.0558	.0166	- .0758
Var. 25	.0762	.1037	.0150	- .1162	.3162
Var. 26	- .0712	- .0321	- .0985	- .0235	.0549
Var. 27	.2299	.1701	.1951	.1001	.0346
Var. 28	.1110	.1419	.0284	.0153	- .0493
Var. 29	- .0550	- .0642	- .0400	- .1978	- .0123
Var. 30	- .0841	- .1230	.0059	.0454	- .1027
Var. 31	- .0256	- .0125	- .0302	.0727	.0923

CORRELATION MATRIX - ALL VARIABLES - HIGH GROUP

	Var. 6	Var. 7	Var. 8	Var. 9	Var. 10
Var. 1	.3374	.3418	.1728	- .0123	.0302
Var. 2	.2740	.3433	.2114	.0327	.0733
Var. 3	.2535	.2035	.0922	- .0176	- .0076
Var. 4	.1695	.1149	.1060	.1891	.1631
Var. 5	.4160	.5791	.0868	- .0427	- .1320
Var. 6	1.0000	.6409	.0915	- .1754	- .0788
Var. 7	.6409	1.0000	.1581	- .0166	.0826
Var. 8	.0915	.1581	1.0000	.4653	.6481
Var. 9	- .1754	- .0166	.4653	1.0000	.5614
Var. 10	- .0788	.0826	.6481	.5614	1.0000
Var. 11	- .3484	- .1831	.2658	.4290	.5572
Var. 12	- .2002	- .0459	.5731	.3840	.6498
Var. 13	.0803	- .0697	.2408	.3247	.2315
Var. 14	.2854	.1961	.2802	.2564	.0973
Var. 15	.2950	.3573	.0391	.1510	.0444
Var. 16	.1523	.0414	- .0542	.2710	- .0704
Var. 17	- .1113	- .2329	.2408	.6063	.3074
Var. 18	.0274	.0085	.2321	.5079	.2534
Var. 19	.2314	.1835	.1465	- .2181	.0379
Var. 20	.2297	.1408	.3651	.3522	.2465
Var. 21	- .0996	.2599	.0678	.4586	.1353
Var. 22	- .1096	- .0357	.3567	.5728	.4047
Var. 23	.0281	.0661	.1946	.4039	.2229
Var. 24	-.3383	- .3551	- .0363	.1636	.0636
Var. 25	.2952	.2258	- .1273	- .0813	- .2068
Var. 26	.0511	.1240	.0302	.0686	.2060
Var. 27	-.0265	.0632	- .1244	- .2134	- .1465
Var. 28	.0720	.0734	- .0231	- .0218	.0536
Var. 29	.0487	.0692	- .1164	.0054	- .0195
Var. 30	- .3315	- .1617	.0940	.1114	.2687
Var. 31	.1322	- .0528	- .0025	- .0719	- .2750

CORRELATION MATRIX - ALL VARIABLES - HIGH GROUP

	Var. 11	Var. 12	Var. 13	Var. 14	Var. 15
Var. 1	- .1267	- .1096	.1410	.2792	.0618
Var. 2	- .0034	- .0255	.0786	.2877	.1264
Var. 3	- .1642	- .1350	.1556	.1564	- .0242
Var. 4	.1747	.0339	.1838	.0919	.0701
Var. 5	- .2324	- .1528	- .1361	.0288	.1541
Var. 6	- .3484	- .2002	.0803	.2854	.2950
Var. 7	- .1831	- .0459	- .0697	.1961	.3573
Var. 8	.2658	.5731	.2408	.2802	.0391
Var. 9	.4290	.3840	.3247	.2564	.1510
Var. 10	.5572	.6498	.2315	.0973	.0444
Var. 11	1.0000	.6490	.1207	- .2812	- .2297
Var. 12	.6490	1.0000	.0416	- .1834	- .0999
Var. 13	.1207	.0416	1.0000	.5209	.4939
Var. 14	- .2812	- .1834	.5209	1.0000	.5745
Var. 15	- .2297	- .0999	.4939	.5745	1.0000
Var. 16	- .3256	- .3318	.6608	.6307	.5997
Var. 17	.1850	.0295	.6679	.5158	.3147
Var. 18	.0393	.0546	.5528	.4563	.3640
Var. 19	- .1287	- .0343	.3128	.4235	.3271
Var. 20	- .0685	.0619	.6424	.6285	.5948
Var. 21	.1498	- .0532	.4029	.3803	.1441
Var. 22	.2375	.1587	.5663	.4447	.3576
Var. 23	.1872	.1248	.3743	.3188	.1974
Var. 24	.3943	.0779	- .0885	- .2653	- .4245
Var. 25	- .3900	- .2954	- .1104	.2132	.2042
Var. 26	.1484	.1163	.1057	.0242	.1141
Var. 27	- .0856	- .1501	- .2999	- .1608	- .2181
Var. 28	- .0958	- .1645	.3334	.3935	.3292
Var. 29	.1310	.0151	- .0301	.0984	.1207
Var. 30	.3650	.3798	- .1289	- .4539	- .2277
Var. 31	- .2999	- .1722	- .1520	.0418	.1772

CORRELATION MATRIX - ALL VARIABLES - HIGH GROUP

	Var. 16	Var. 17	Var. 18	Var. 19	Var. 20
Var. 1	.0658	.1047	- .0064	.1090	.0851
Var. 2	- .0105	.0555	- .0477	.0850	.1388
Var. 3	.0972	.1231	.0277	.0837	.0041
Var. 4	- .0281	.2383	- .0738	.0723	.0905
Var. 5	. 0520	- .1972	- .0739	- .0020	.0592
Var. 6	.1523	- .1113	.0274	.2314	.2297
Var. 7	.0414	- .2329	.0085	.1835	.1408
Var. 8	- .0542	.2408	.2321	.1465	.3651
Var. 9	.2710	.6063	.5079	- .2181	.3522
Var. 10	- .0704	.3074	.2534	.0379	.2465
Var. 11	- .3256	.1850	.0393	- .1287	.0685
Var. 12	- .3318	.0295	.0546	- .0343	.0619
Var. 13	.6608	.6679	.5528	.3128	.6424
Var. 14	.6307	.5158	.4563	.4235	.6285
Var. 15	.5997	.3147	.3640	.3271	.5948
Var. 16	1.0000	.5961	.7425	.1122	.6880
Var. 17	.5961	1.0000	.5659	.0264	.5757
Var. 18	.7425	.5659	1.0000	- .1207	.6084
Var. 19	.1122	.0264	- .1207	1.0000	.2663
Var. 20	.6880	.5757	.6084	.2663	1.0000
Var. 21	.4152	.6181	.3276	- .[illegible]99	.3771
Var. 22	.3597	.6763	.2866	.1233	.4725
Var. 23	.3557	.4180	.3618	.0689	.4025
Var. 24	- .2548	.0308	- .1526	- .2083	- .3202
Var. 25	.2012	- .1202	.0873	.0781	.2599
Var. 26	.1087	.0237	.2881	- .0976	.0804
Var. 27	- .3473	- .1586	- .3668	.0287	- .2933
Var. 28	.3364	.3034	.1764	.3731	.3610
Var. 29	.0153	- .0131	.0348	.1115	.0074
Var. 30	- .3551	- .1327	- .1371	- .2486	- .3583
Var. 31	.0285	- .1135	- .0142	- .2423	.0022

CORRELATION MATRIX - ALL VARIABLES - HIGH GROUP

	Var. 21	Var. 22	Var. 23	Var. 24	Var. 25
Var. 1	.0357	.1521	.0493	- .0428	.0762
Var. 2	.0136	.1226	.1026	- .1074	.1037
Var. 3	.0549	.1481	- .0026	.0558	.0150
Var. 4	.2825	.3372	.0971	.0166	- .1162
Var. 5	- .2376	- .0622	.0073	- .0758	.3162
Var. 6	- .0996	- .1096	.0281	- .3383	.2952
Var. 7	- .2599	- .0357	.0661	- .3551	.2258
Var. 8	.0678	.3567	.1946	- .0363	- .1273
Var. 9	.4586	.5728	.4039	.1636	- .0813
Var. 10	.1353	.4047	.2229	.0636	- .2068
Var. 11	.1498	.2375	.1872	.3943	- .3900
Var. 12	- .0532	.1587	.1248	.0779	- .2954
Var. 13	.4029	.5663	.3743	- .0885	- .1104
Var. 14	.3803	.4447	.3188	- .2653	.2132
Var. 15	.1441	.3576	.1974	- .4245	.2042
Var. 16	.4152	.3597	.3557	- .2548	.2012
Var. 17	.6181	.6763	.4180	.0308	- .1202
Var. 18	.3276	.2866	.3618	= .1626	.0873
Var. 19	- .0099	.1233	.0689	- .2083	.0781
Var. 20	.3771	.4725	.4025	- .3202	.2599
Var. 21	1.0000	.4286	.3218	.1463	- .0628
Var. 22	.4286	1.0000	.3402	.1198	- .1208
Var. 23	.3218	.3402	1.0000	- .0389	- .0798
Var. 24	.1463	.1198	- .0389	1.0000	- .1909
Var. 25	- .0628	- .1208	- .0798	- .1909	1.0000
Var. 26	- .0593	- .0105	.0291	- .0943	.0058
Var. 27	- .1281	- .0381	- .1574	.0904	- .0852
Var. 28	.1123	.1455	.0746	- .2027	.1352
Var. 29	- .0730	.0880	- .1408	.0527	.1544
Var. 30	- .0925	- .1336	- .1034	.2442	- .2332
Var. 31	.0562	- .0906	.1014	- .0468	- .0259

CORRELATION MATRIX -ALL VARIABLES - HIGH GROUP

	Var. 26	Var. 27	Var. 28	Var. 29	Var. 30
Var. 1	- .0712	.2299	.1110	- .0550	- .0841
Var. 2	- .0321	.1701	.1419	- .0642	- .1230
Var. 3	- .0985	.1951	.0284	- .0400	.0059
Var. 4	- .0235	.1001	.0153	- .1978	.0454
Var. 5	.0549	.0346	- .0493	- .0123	- .1027
Var. 6	.0511	- .0265	.0720	.0487	- .3315
Var. 7	.1240	.0632	.0734	.0692	- .1617
Var. 8	.0302	- .1244	- .0231	- .1164	.0940
Var. 9	.0686	- .2134	- .0218	.0054	.1114
Var. 10	.2060	- .1465	.0536	- .0195	.2687
Var. 11	.1484	- .0856	- .0958	.1310	.3650
Var. 12	.1163	- .1501	- .1645	.0151	.3798
Var. 13	.1057	- .2909	.3334	- .0301	- .1289
Var. 14	.0242	- .1608	.3935	.0984	- .4539
Var. 15	.1141	- .2181	.3292	.1207	- .2277
Var. 16	.1087	- .3473	.3364	.0153	- .3551
Var. 17	.0237	- .1586	.3034	- .0131	- .1327
Var. 18	.2881	- .3668	.1764	.0348	- .1371
Var. 19	- .0976	.0287	.3731	.1115	- .2486
Var. 20	.0804	- .2933	.3610	.0074	- .3583
Var. 21	- .0593	- .1281	.1123	- .0730	- .0925
Var. 22	- .0105	- .0381	.1455	.0880	- .1336
Var. 23	.0291	- .1574	.0746	- .1408	- .1034
Var. 24	- .0943	.0904	- .2027	.0527	.2442
Var. 25	.0058	- .0852	.1352	.1544	- .2332
Var. 26	1.0000	- .4839	.1501	.1683	.0042
Var. 27	- .4839	1.0000	- .0999	.1254	- .0051
Var. 28	.1501	- .0999	1.0000	.1562	- .5255
Var. 29	.1683	.1254	.1562	1.0000	- .2644
Var. 30	.0042	- .0051	- .5255	- .2644	1.0000
Var. 31	- .2230	.0005	- .4860	- .5512	- .2096

CORRELATION MATRIX - ALL VARIABLES -HIGH GROUP

	Var. 31
Var. 1	-- .0256
Var. 2	- .0125
Var. 3	- .0302
Var. 4	.0727
Var. 5	.0923
Var. 6	.1322
Var. 7	- .0528
Var. 8	- .0025
Var. 9	- .0719
Var. 10	- .2750
Var. 11	- .2999
Var. 12	- .1722
Var. 13	- .1520
Var. 14	- .0418
Var. 15	- .1772
Var. 16	.0285
Var. 17	- .1135
Var. 18	- .0142
Var. 19	- .2423
Var. 20	.0022
Var. 21	.0562
Var. 22	- .0906
Var. 23	.1014
Var. 24	- .0468
Var. 25	- .0259
Var. 26	- .2230
Var. 27	.0005
Var. 28	- .4860
Var. 29	- .5512
Var. 30	- .2096
Var. 31	1.0000

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 1	Var. 2	Var. 3	Var. 4	Var. 5
Var. 1	1.0000	.7637	.7446	.2733	- .3316
Var. 2	.7637	1.0000	.1435	.3272	- .3721
Var. 3	.7446	.1435	1.0000	.0993	- .1404
Var. 4	.2733	.3272	.0993	1.0000	- .5115
Var. 5	- .3316	- .3721	- .1404	- .5115	1.0000
Var. 6	- .0962	- .0046	- .1238	- .1402	- .0637
Var. 7	- .3296	- .3046	- .1897	- .5220	.6914
Var. 8	- .0647	- .0065	- .0930	.0393	.0048
Var. 9	.0090	.1758	- .1682	.1689	- .0335
Var. 10	- .1101	- .0991	- .0760	.0151	.0013
Var. 11	- .2007	- .1669	- .1328	.0882	.0342
Var. 12	- .1612	- .0159	- .2284	.0876	.0237
Var. 13	- .1131	- .1686	.0080	.0519	.1229
Var. 14	.2433	.1197	.2616	.0886	- .0970
Var. 15	- .0243	- .1137	.0942	- .1101	.2259
Var. 16	.0760	- .0050	.1237	- .0711	.1401
Var. 17	.2018	.1866	.1188	.1265	.0666
Var. 18	.0806	.0585	.0671	- .0958	.1378
Var. 19	.0128	- .0962	.1263	.1666	.0657
Var. 20	.0129	- .0075	.0374	- .0175	.1409
Var. 21	.1024	.1462	.0073	.1211	.0247
Var. 22	.0145	.0888	- .0594	.0916	.0180
Var. 23	.0345	.0487	.0019	.1218	- .1426
Var. 24	.1269	.1543	.0441	.1292	- .0526
Var. 25	.1567	.2433	- .0167	.0646	- .0463
Var. 26	- .2743	- .3006	- .1098	- .1779	.1545
Var. 27	.2043	.2557	.0431	.0410	= .2422
Var. 28	- .1337	- .2587	.0496	- .2622	.2687
Var. 29	- .0801	- .0888	- .0365	- .1409	.1735
Var. 30	.0393	.0206	.0453	.1034	- .0656
Var. 31	.1341	.2194	- .0119	.2127	- .2806

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 6	Var. 7	Var. 8	Var. 9	Var. 10
Var. 1	- .0962	- .3296	- .0647	.0090	- .1101
Var. 2	- .0046	- .3046	- .0065	.1758	- .0991
Var. 3	- .1238	- .1897	- .0930	- .1682	- .0760
Var. 4	- .1402	- .5220	.0393	.1689	.0151
Var. 5	- .0637	.6914	.0048	- .0335	.0013
Var. 6	1.0000	.6402	- .0027	- .0731	- .0218
Var. 7	.6402	1.0000	- .0366	- .1095	- .0406
Var. 8	- .0027	- .0366	1.0000	.5712	.7288
Var. 9	- .0731	- .1095	.5712	1.0000	.5176
Var. 10	- .0218	- .0406	.7288	.5176	1.0000
Var. 11	- .0582	- .0663	.5569	.3843	.6488
Var. 12	.0100	- .0353	.5518	.3937	.6483
Var. 13	.0625	.1591	.3310	.3386	.2435
Var. 14	.1592	.0558	.2124	.2357	.0649
Var. 15	.2762	.3846	.1502	.1099	.0505
Var. 16	.1457	.2481	.0085	.2540	- .1278
Var. 17	- .0037	.0625	.3474	.5394	.2276
Var. 18	.1272	.2108	.0629	.3073	.0091
Var. 19	.0009	.0512	.0974	- .0508	.1133
Var. 20	.2339	.2880	.3567	.3557	.2468
Var. 21	- .0866	- .0226	.1127	.4040	.1271
Var. 22	.1106	.0920	.4418	.5529	.3171
Var. 23	.1362	- .0478	.4160	.4125	.3270
Var. 24	- .2605	- .2436	.0677	.1199	- .0268
Var. 25	.0374	- .0192	- .1759	- .1253	- .2800
Var. 26	.0893	.1505	.3066	.0048	.2987
Var. 27	- .0720	- .1976	- .4571	- .2319	- .4087
Var. 28	.3096	.4285	.1410	- .0653	.1826
Var. 29	.2306	.3333	.0791	- .0587	.1825
Var. 30	- .3186	- .3075	- .1409	.0119	- .0562
Var. 31	- .1695	- .3468	- .0764	.0612	- .2358

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 11	Var. 12	Var. 13	Var. 14	Var. 15
Var. 1	- .2007	- .1612	- .1131	.2433	- .0243
Var. 2	- .1669	- .0159	- .1686	.1197	- .1137
Var. 3	- .1328	- .2284	.0080	.2616	.0942
Var. 4	.0882	.0876	.0519	.0886	- .1101
Var. 5	.0342	.0237	.1229	- .0970	.2259
Var. 6	- .0582	.0100	.0625	.1592	.2762
Var. 7	- .0663	- .0353	.1591	.0558	.3846
Var. 8	.5569	.5518	.3310	.2124	.1502
Var. 9	.3843	.3937	.3386	.2357	.1099
Var. 10	.6488	.6483	.2435	.0649	.0505
Var. 11	1.0000	.6269	.1704	- .1722	- .1168
Var. 12	.6269	1.0000	- .0726	- .1489	- .1394
Var. 13	.1704	- .0726	1.0000	.5019	.5876
Var. 14	- .1722	- .1489	.5019	1.0000	.6168
Var. 15	- .1168	- .1394	.5876	.6168	1.0000
Var. 16	- .3004	- .3600	.6239	.6575	.6433
Var. 17	.1491	.0238	.5954	.6123	.4875
Var. 18	- .2836	- .2017	.5115	.5745	.5240
Var. 19	.0442	- .0679	.4753	.3130	.5222
Var. 20	.0761	.0770	.6264	.6758	.6626
Var. 21	.0749	.0532	.4733	.4448	.2638
Var. 22	.3269	.1499	.6401	.5218	.5136
Var. 23	.2554	.1906	.2937	.2767	.1582
Var. 24	.2207	.0443	.0639	- .1557	- .1888
Var. 25	- .3426	- .1808	- .0602	.2221	.0725
Var. 26	.2047	.2020	.0977	.1172	.1118
Var. 27	- .3039	- .3232	- .2593	- .1522	- .2444
Var. 28	.0497	.0241	.2245	.2934	.3609
Var. 29	.0621	.1313	- .1766	- .1414	.0643
Var. 30	.2353	.1622	- .3025	- .4771	- .4874
Var. 31	- .2195	- .1965	.1400	.1641	- .0159

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 16	Var. 17	Var. 18	Var. 19	Var. 20
Var. 1	.0760	.2018	.0806	.0128	.0129
Var. 2	- .0050	.1866	.0585	- .0962	- .0075
Var. 3	.1237	.1188	.0671	.1263	.0374
Var. 4	- .0711	.1265	- .0958	.1666	- .0175
Var. 5	.1401	.0666	.1378	.0657	.1409
Var. 6	.1457	- .0037	.1272	.0009	.2339
Var. 7	.2481	.0625	.2108	.0512	.2880
Var. 8	.0085	.3474	.0629	.0974	.3567
Var. 9	.2540	.5394	.3073	- .0508	.3557
Var. 10	- .1278	.2276	.0091	.1133	.2468
Var. 11	- .3004	.1491	- .2836	.0442	.0761
Var. 12	- .3600	.0238	- .2017	- .0679	.0770
Var. 13	.6239	.5954	.5115	.4753	.6264
Var. 14	.5575	.6123	.5745	.3130	.6758
Var. 15	.6433	.4875	.5240	.5222	.6526
Var. 16	1.0000	.6215	.8323	.1771	.6813
Var. 17	.6215	1.0000	.5117	.3304	.6477
Var. 18	.8323	.5117	1.0000	.0942	.5874
Var. 19	.1771	.3304	.0942	1.0000	.3293
Var. 20	.6813	.6477	.5874	.3293	1.0000
Var. 21	.5633	.6930	.4308	.1071	.5870
Var. 22	.4843	.7380	.3179	.3136	.6094
Var. 23	.2703	.3534	.2468	- .0518	.3766
Var. 24	- .1810	.1155	- .1804	- .0957	- .1260
Var. 25	.1369	.0679	.0538	- .0315	.1701
Var. 26	- .0676	.0346	- .0205	.0645	.0622
Var. 27	- .1483	- .2051	- .1930	- .0862	- .3288
Var. 28	.2568	.2207	.1694	.3362	.3794
Var. 29	- .1853	- .2015	- .0957	.1254	- .0113
Var. 30	- .4479	- .2320	- .3613	- .1699	- .5335
Var. 31	.1927	.0945	.1544	- .2224	.0349

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 21	Var. 22	Var. 23	Var. 24	Var. 25
Var. 1	.1024	.0145	.0345	.1269	.1567
Var. 2	.1462	.0888	.0487	.1543	.2433
Var. 3	.0073	- .0594	.0019	.0441	- .0167
Var. 4	.1211	.0916	.1218	.1292	.0646
Var. 5	.0247	.0180	- .1426	- .0526	- .0463
Var. 6	- .0866	.1106	.1362	- .2605	.0374
Var. 7	- .0226	.0920	- .0478	- .2436	- .0192
Var. 8	.1127	.4418	.4160	.0677	- .1759
Var. 9	.4040	.5529	.4125	.1199	- .1253
Var. 10	.1271	.3171	.3270	- .0268	- .2800
Var. 11	.0749	.3269	.2554	.2207	- .3426
Var. 12	.0532	.1499	.1906	.0443	- .1808
Var. 13	.4733	.6401	.2937	.0639	- .0602
Var. 14	.4448	.5218	.2767	- .1557	.2221
Var. 15	.2638	.5136	.1582	- .1888	.0725
Var. 16	.5633	.4843	.2703	- .1810	.1369
Var. 17	.6930	.7380	.3534	.1155	.0679
Var. 18	.4308	.3179	.2468	- .1804	.0538
Var. 19	.1071	.3136	- .0518	- .0957	- .0315
Var. 20	.5870	.6094	.3766	- .1260	.1701
Var. 21	1.0000	.6041	.2503	.1264	.1905
Var. 22	.6041	1.0000	.3285	.0963	.0077
Var. 23	.2503	.3285	1.0000	.1111	- .2154
Var. 24	.1264	.0963	.1111	1.0000	- .0027
Var. 25	.1905	.0077	- .2154	- .0027	1.0000
Var. 26	- .1426	.0341	.0659	- .1897	- .2464
Var. 27	- .1595	- .2315	- .2151	.0665	.2334
Var. 28	- .0402	.1411	.0579	- .3890	- .0583
Var. 29	- .3140	- .1587	- .2238	- .1079	.0112
Var. 30	- .1654	- .1687	- .1097	.3659	- .1735
Var. 31	.3381	.0993	.1632	.0699	.1272

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 26	Var. 27	Var. 28	Var. 29	Var. 30
Var. 1	- .2743	.2043	- .1337	- .0801	.0393
Var. 2	- .3006	.2557	- .2587	- .0888	.0206
Var. 3	- .1098	.0431	.0496	- .0365	.0453
Var. 4	- .1779	.0410	- .2622	- .1409	.1034
Var. 5	.1545	- .2422	.2687	.1735	- .0656
Var. 6	.0893	- .0720	.3096	.2306	- .3186
Var. 7	.1505	- .1976	.4285	.3333	- .3075
Var. 8	.3066	- .4571	.1410	.0791	- .1409
Var. 9	.0048	- .2319	- .0653	- .0587	.0119
Var. 10	.2987	- .4087	.1826	.1825	- .0562
Var. 11	.2047	- .3039	.0497	.0621	.2353
Var. 12	.2020	- .3232	.0241	.1313	.1622
Var. 13	.0977	- .2593	.2245	- .1766	- .3025
Var. 14	.1172	- .1522	.2934	- .1414	- .4771
Var. 15	.1118	- .2444	.3609	.0643	- .4874
Var. 16	- .0676	- .1483	.2568	- .1853	- .4479
Var. 17	.0346	- .2051	.2207	- .2015	- .2320
Var. 18	- .0205	- .1930	.1694	- .0957	- .3613
Var. 19	.0645	- .0862	.3362	.1254	- .1699
Var. 20	.0622	- .3288	.3794	- .0113	- .5335
Var. 21	- .1426	- .1595	- .0402	- .3140	- .1654
Var. 22	.0341	- .2315	.1411	- .1587	- .1687
Var. 23	.0659	- .2151	.0579	- .2238	- .1097
Var. 24	- .1897	.0665	- .3890	- .1079	.3659
Var. 25	- .2464	.2334	- .0583	.0112	- .1735
Var. 26	1.0000	- .4861	.3760	.0426	- .1234
Var. 27	- .4861	1.0000	- .2140	- .0324	.1278
Var. 28	.3760	- .2140	1.0000	.2188	- .6134
Var. 29	.0426	- .0324	.2188	1.0000	- .1988
Var. 30	- .1234	.1278	- .6134	- .1988	1.0000
Var. 31	- .2135	.0883	- .5370	- .7382	- .0027

CORRELATION MATRIX - ALL VARIABLES - MIDDLE GROUP

	Var. 31
Var. 1	.1341
Var. 2	.2194
Var. 3	- .0119
Var. 4	.2127
Var. 5	- .2806
Var. 6	- .1695
Var. 7	- .3468
Var. 8	- .0764
Var. 9	.0612
Var. 10	- .2358
Var. 11	- .2195
Var. 12	- .1965
Var. 13	.1400
Var. 14	.1641
Var. 15	- .0159
Var. 16	.1927
Var. 17	.0945
Var. 18	.1544
Var. 19	- .2224
Var. 20	.0349
Var. 21	.3381
Var. 22	.0993
Var. 23	.1632
Var. 24	.0699
Var. 25	.1272
Var. 26	- .2135
Var. 27	.0883
Var. 28	- .5370
Var. 29	- .7382
Var. 30	- .0027
Var. 31	1.0000

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 1	Var. 2	Var. 3	Var. 4	Var. 5
Var. 1	1.0000	.6993	.5769	.3061	- .0216
Var. 2	.6993	1.0000	- .1694	.4599	- .0056
Var. 3	.5769	- .1694	1.0000	- .1040	- .0064
Var. 4	.3061	.4599	- .1040	1.0000	.1558
Var. 5	- .0216	- .0056	- .0064	.1558	1.0000
Var. 6	- .0128	- .0755	.0619	.2331	.3374
Var. 7	.1195	.1402	.0192	.0457	.4107
Var. 8	- .0097	.0650	- .0851	.2006	- .1664
Var. 9	- .1155	.0619	- .2152	.1209	- .1875
Var. 10	- .1656	- .0744	- .1186	.0357	- .2157
Var. 11	.0140	.0868	- .0890	.1831	- .1979
Var. 12	- .0399	- .0319	.0052	.0413	- .0298
Var. 13	- .1149	.0037	- .1606	.1530	- .1751
Var. 14	- .0907	.0038	- .1242	.1916	.1095
Var. 15	- .1596	- .1215	- .0732	.0511	.0804
Var. 16	- .1795	- .1458	- .0763	- .0246	.1620
Var. 17	- .0583	- .0137	- .0793	.1061	.0555
Var. 18	- .1376	- .1850	.0276	- .1089	.1230
Var. 19	.0280	.1304	- .1068	.2646	- .0738
Var. 20	- .1018	.0115	- .1316	.1465	.1821
Var. 21	- .0166	.1387	- .1708	.1099	.0978
Var. 22	- .0006	.1630	- .1870	.2020	.0057
Var. 23	.0142	.0603	- .0569	- .0804	- .1485
Var. 24	.0881	.1037	- .0101	.1710	.1014
Var. 25	- .2522	- .2225	- .0962	- .1326	.1607
Var. 26	- .0360	.0196	- .0768	.0900	- .1338
Var. 27	.1120	.1004	.0418	- .0158	.1505
Var. 28	.0128	.0594	- .0438	- .0004	.2012
Var. 29	- .2039	- .1698	- .0604	.0570	.1497
Var. 30	.1576	.1129	.0529	- .0693	- .2742
Var. 31	.0294	.0398	- .0061	.0102	.0309

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 6	Var. 7	Var. 8	Var. 9	Var. 10
Var. 1	- .0128	.1195	- .0097	- .1155	- .1656
Var. 2	- .0755	.1402	.0650	.0619	- .0744
Var. 3	.0619	.0192	- .0851	- .2152	- .1186
Var. 4	.2331	.0457	.2006	.1209	.0357
Var. 5	.3374	.4107	- .1664	- .1875	- .2157
Var. 6	1.0000	.3376	- .0485	- .0564	- .0867
Var. 7	.3376	1.0000	- .0870	- .0964	.0144
Var. 8	- .0485	- .0870	1.0000	.3421	.6419
Var. 9	- .0564	- .0964	.3421	1.0000	.4077
Var. 10	- .0867	.0144	.6419	.4077	1.0000
Var. 11	.1005	.0687	.4711	.2732	.6303
Var. 12	.0614	.1822	.6357	.2282	.6684
Var. 13	.0523	- .0813	.3675	.2290	.3574
Var. 14	- .0209	- .0316	.2102	.2694	.1394
Var. 15	.1123	.0501	.3108	.1511	.2601
Var. 16	- .0781	.0386	.0072	.3266	- .0072
Var. 17	.0110	.0062	.2589	.4393	.2920
Var. 18	- .0282	.0058	.1798	.3259	.2003
Var. 19	.0403	.0003	.2048	.0228	.3163
Var. 20	.0203	.0867	.4596	.3081	.3495
Var. 21	.0749	.0379	.0489	.5116	.1002
Var. 22	.1740	.0530	.3805	.5112	.4328
Var. 23	- .2351	- .0475	.1856	.2408	.1397
Var. 24	.0800	- .0904	- .1528	.1053	- .1923
Var. 25	.0512	- .1078	- .1924	.0496	- .1915
Var. 26	- .0344	- .0532	.3565	.2872	.3270
Var. 27	.0017	- .0019	- .3537	- .0140	- .3921
Var. 28	.0154	.2839	- .0023	- .0173	.0637
Var. 29	.0769	- .1056	.1201	.0799	.1757
Var. 30	- .0233	- .1322	- .0489	.0072	- .0004
Var. 31	.1183	.0359	- .1305	- .0501	- .2563

CORRELATION MATRIX - ALL VARIABLES -LOW GROUP

	Var. 11	Var. 12	Var. 13	Var. 14	Var. 15
Var. 1	.0140	- .0399	- .1149	- .0907	- .1596
Var. 2	.0868	- .0319	.0037	.0038	- .1215
Var. 3	- .0890	.0052	- .1606	- .1242	- .0732
Var. 4	.1831	.0413	.1530	.1916	.0511
Var. 5	- .1979	- .0298	- .1751	.1095	.0804
Var. 6	.1005	.0614	.0523	- .0209	.1123
Var. 7	.0687	.1822	- .0813	- .0316	.0501
Var. 8	.4711	.6357	.3675	.2102	.3108
Var. 9	.2732	.2282	.2290	.2694	.1511
Var. 10	.6303	.6684	.3574	.1394	.2601
Var. 11	1.0000	.5504	.1661	- .1423	- .0253
Var. 12	.5504	1.0000	.0677	- .0873	.0283
Var. 13	.1661	.0677	1.0000	.5078	.6982
Var. 14	- .1423	- .0873	.5078	1.0000	.6581
Var. 15	- .0253	.0283	.6982	.6581	1.0000
Var. 16	- .2762	- .2368	.4131	.6137	.4680
Var. 17	.0652	.0012	.5644	.4916	.4815
Var. 18	- .1271	- .0354	.3116	.3500	.3288
Var. 19	.2851	.1485	.5480	.4097	.5403
Var. 20	.0745	.2590	.5457	.6165	.6198
Var. 21	- .0113	- .0478	.2941	.3649	.2010
Var. 22	.2582	.2798	.6200	.5054	.4818
Var. 23	.0928	.0673	.0962	- .0443	- .0635
Var. 24	- .0870	- .2020	.0123	- .0054	- .1923
Var. 25	- .3414	- .1917	- .2781	.2118	- .0186
Var. 26	.1575	.0862	.4131	.2111	.3509
Var. 27	- .2823	- .3157	- .2610	- .1060	- .2649
Var. 28	- .0597	- .0416	.1753	.2546	.3652
Var. 29	.1458	.0618	.1350	.1084	.1810
Var. 30	.0735	.0211	- .2200	- .3697	- .4214
Var. 31	- .2009	- .0367	- .1753	.0375	- .1394

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 16	Var. 17	Var. 18	Var. 19	Var. 20
Var. 1	- .1795	- .0583	- .1376	.0280	- .1018
Var. 2	- .1458	- .0137	- .1850	.1304	.0115
Var. 3	- .0763	- .0793	.0276	- .1068	- .1316
Var. 4	- .0246	.1061	- .1089	.2646	.1465
Var. 5	.1620	.0555	.1230	- .0738	.1821
Var. 6	- .0781	.0110	- .0282	.0403	.0203
Var. 7	.0386	.0062	.0058	.0003	.0867
Var. 8	.0072	.2589	.1798	.2048	.4596
Var. 9	.3266	.4393	.3259	.0228	.3081
Var. 10	- .0072	.2920	.2003	.3163	.3495
Var. 11	- .2762	.0652	- .1271	.2851	.0745
Var. 12	- .2368	.0012	- .0354	.1485	.2590
Var. 13	.4131	.5644	.3116	.5480	.5457
Var. 14	.6137	.4916	.3500	.4097	.6165
Var. 15	.4680	.4815	.3288	.5403	.6198
Var. 16	1.0000	.6328	.7251	- .0858	.6365
Var. 17	.6328	1.0000	.5176	.1488	.5596
Var. 18	.7251	.5176	1.0000	- .1361	.4757
Var. 19	- .0858	.1488	- .1361	1.0000	.2198
Var. 20	.6365	.5596	.4757	.2198	1.0000
Var. 21	.5588	.6606	.4679	- .0136	.4592
Var. 22	.3823	.5836	.3177	.3787	.6000
Var. 23	.2958	.2499	.3453	- .2413	.1970
Var. 24	.0677	.1505	- .0507	- .2188	- .0459
Var. 25	.2142	- .0339	.0910	- .2497	.0114
Var. 26	.1743	.3030	.2006	.1707	.2937
Var. 27	- .0907	- .2012	- .1429	- .0690	- .2509
Var. 28	.3341	.2369	.2887	.1768	.2831
Var. 29	.1921	.1756	.2019	- .0155	.2774
Var. 30	- .4277	- .2169	- .2524	- .1116	- .3468
Var. 31	- .0489	- .1552	- .1966	- .1074	- .1601

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 21	Var. 22	Var. 23	Var. 24	Var. 25
Var. 1	- .0166	- .0006	.0142	.0881	- .2522
Var. 2	.1387	.1630	.0603	.1037	- .2225
Var. 3	- .1708	- .1870	- .0569	- .0101	- .0962
Var. 4	.1099	.2020	- .0804	.1710	- .1326
Var. 5	.0978	.0057	- .1485	.1014	.1607
Var. 6	.0749	.1740	- .2351	.0800	.0512
Var. 7	.0379	.0530	- .0475	- .0904	- .1078
Var. 8	.0489	.3805	.1856	- .1528	- .1924
Var. 9	.5116	.5112	.2408	.1053	.0496
Var. 10	.1002	.4328	.1397	- .1923	- .1915
Var. 11	- .0113	.2582	.0928	- .0870	- .3414
Var. 12	- .0478	.2798	.0673	- .2020	- .1917
Var. 13	.2941	.6200	.0962	.0123	- .2781
Var. 14	.3649	.5054	- .0443	- .0054	.2118
Var. 15	.2010	.4818	- .0635	- .1923	- .0186
Var. 16	.5588	.3823	.2958	.0677	.2142
Var. 17	.6606	.5836	.2499	.1505	- .0339
Var. 18	.4679	.3177	.3453	- .0507	.0910
Var. 19	- .0136	.3787	- .2413	- .2188	- .2497
Var. 20	.4592	.6000	.1970	.0459	.0114
Var. 21	1.0000	.5727	.0960	.2421	.0453
Var. 22	.5727	1.0000	.1249	.1053	- .1602
Var. 23	.0960	.1249	1.0000	.0751	- .0023
Var. 24	.2421	.1053	.0751	1.0000	.0226
Var. 25	.0453	- .1602	- .0023	.0226	1.0000
Var. 26	.2086	.3051	.1821	.1030	- .0751
Var. 27	- .0324	- .1890	- .1421	- .0078	.1492
Var. 28	.1673	.1391	- .0132	- .0359	- .0009
Var. 29	.0185	.0041	- .0193	- .2315	.1092
Var. 30	- .1352	- .0310	- .0300	.0739	- .0699
Var. 31	- .0141	- .1126	.0596	.1539	.0012

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 26	Var. 27	Var. 28	Var. 29	Var. 30
Var. 1	- .0360	.1120	.0128	- .2039	.1576
Var. 2	.0196	.1004	.0594	- .1698	.1129
Var. 3	- .0768	.0418	- .0438	- .0604	.0529
Var. 4	.0900	- .0158	- .0004	.0570	- .0693
Var. 5	- .1338	.1505	.2012	.1497	- .2742
Var. 6	- .0344	.0017	.0154	- .0769	- .0233
Var. 7	- .0532	- .0019	.2839	- .1056	- .1322
Var. 8	.3565	- .3537	- .0023	.1201	- .0489
Var. 9	.2872	- .0140	- .0173	.0799	.0072
Var. 10	.3270	- .3921	.0637	.1757	- .0004
Var. 11	.1575	- .2823	- .0597	.1458	.0735
Var. 12	.0862	- .3157	- .0416	.0618	.0211
Var. 13	.4131	- .2610	.1753	.1350	- .2200
Var. 14	.2111	- .1060	.2546	.1084	- .3697
Var. 15	.3509	- .2649	.3652	.1810	- .4214
Var. 16	.1743	- .0907	.3341	.1921	- .4277
Var. 17	.3030	- .2012	.2369	.1756	- .2169
Var. 18	.2006	- .1429	.2887	.2019	- .2524
Var. 19	.1707	- .0690	.1768	- .0155	- .1116
Var. 20	.2937	- .2509	.2831	.2774	- .3468
Var. 21	.2086	- .0324	.1673	.0185	- .1352
Var. 22	.3051	- .1890	.1391	.0041	- .0310
Var. 23	.1821	- .1421	- .0132	- .0193	- .0300
Var. 24	.1030	- .0078	- .0359	- .2315	.0739
Var. 25	- .0751	.1492	- .0009	.1092	- .0699
Var. 26	1.0000	- .3012	.1642	.0041	- .0143
Var. 27	- .3012	1.0000	- .1525	.0849	.0503
Var. 28	.1642	- .1525	1.0000	.0699	- .5663
Var. 29	.0041	.0849	.0699	1.0000	- .3806
Var. 30	- .0143	.0503	- .5663	- .3806	1.0000
Var. 31	- .2581	.1522	- .3849	- .4894	- .1266

CORRELATION MATRIX - ALL VARIABLES - LOW GROUP

	Var. 31
Var. 1	.0294
Var. 2	.0398
Var. 3	- .0061
Var. 4	.0102
Var. 5	.0309
Var. 6	.1183
Var. 7	.0359
Var. 8	- .1305
Var. 9	- .0501
Var. 10	- .2563
Var. 11	- .2009
Var. 12	- .0367
Var. 13	- .1753
Var. 14	.0375
Var. 15	- .1394
Var. 16	- .0489
Var. 17	- .1552
Var. 18	- .1966
Var. 19	- .1074
Var. 20	- .1601
Var. 21	- .0141
Var. 22	- .1126
Var. 23	.0596
Var. 24	.1539
Var. 25	.0012
Var. 26	- .2581
Var. 27	.1522
Var. 28	- .3849
Var. 29	- .4894
Var. 30	- .1266
Var. 31	1.0000

Appendix L

FACTOR MATRIX - TOTAL GROUP

1. (Do)	.50260	.59538	.15291	.23965	.13181
2. (Cs)	.59839	.38329	- .40536	.08032	.12313
3. (Sy)	.40476	.74352	.10689	.20367	.03286
4. (Sp)	.15011	.82408	- .01184	- .16528	- .04840
5. (Sa)	.17339	.80369	.11996	.21562	.19216
6. (Wb)	.79142	- .03478	.21903	- .24145	- .25409
7. (Re)	.77445	- .32542	.17588	- .00599	.17738
8. (So)	.71084	- .29371	.42205	.01531	- .04773
9. (Sc)	.73774	- .51687	- .20181	.14452	- .17637
10. (To)	.84042	- .04121	- .21132	- .17930	- .02407
11. (Gi)	.64743	- .23325	- .29104	.37076	- .25193
12. (Cm)	.40734	- .00744	.72342	- .35231	.01150
13. (Ac)	.85463	- .11653	.10119	.14710	.08293
14. (Ai)	.68978	- .10010	- .35313	- .26938	.17317
15. (Ie)	.81093	.14971	.00971	- .28854	.11435
16. (Ey)	.45349	.15321	- .36449	.21207	- .26877
17. (Fx)	- .06907	.17443	- .51156	- .65167	.13306
18. (Fe)	.09732	- .45683	- .06909	.22353	.77222

EIGENVALUES

6.47788	3.20452	1.69846	1.24944	1.00269

CUMULATIVE PROPORTION OF TOTAL VARIANCE

.47516	.71022	.83480	.92645	1.00000

Appendix L

FACTOR MATRIX - HIGH GROUP

1. (Do)	.43454	.49100	- .50984	.11047
2. (Cs)	.65317	.49022	.19013	.27036
3. (Sy)	.43178	.67725	- .33925	.11570
4. (Sp)	.12637	.83466	.05803	- .09407
5. (Sa)	.13949	.77186	- .41513	.14105
6. (Wb)	.79817	- .07918	.01379	- .26892
7. (Re)	.72154	- .38963	- .16605	- .14216
8. (So)	.58794	- .44610	- .27806	- .02425
9. (Sc)	.74425	- .51283	.22221	.12300
10. (To)	.82807	.09062	.31550	- .10668
11. (Gi)	.72882	- .07913	.15612	.44926
12. (Cm)	.21030	- .27096	- .56259	- .62552
13. (Ac)	.82388	- .22861	- .20255	.12863
14. (Ai)	.57989	.06163	.47755	- .18335
15. (Ie)	.71871	.22395	.08304	- .27917
16. (Ey)	.55516	.11398	.10289	- .00013
17. (Fx)	- .15341	.47151	.51881	- .27751
18. (Fe)	.02066	- .50887	- .12934	.41285

EIGENVALUES

6.01947	3.54094	1.75420	1.21573

CUMULATIVE PROPORTION OF TOTAL VARIANCE

.48039	.76298	.90298	1.00000

Appendix L

FACTOR MATRIX - MIDDLE GROUP

1. (Do)	- .48048	- .67872	.12315	.11917	- .12068
2. (Cs)	- .58530	- .47244	- .32631	.17791	- .02141
3. (Sy)	- .35791	- .76650	.21262	.15581	- .14130
4. (Sp)	- .15835	- .83593	.09567	- .19651	.04317
5. (Sa)	- .07734	- .80137	.05147	.07447	- .33603
6. (Wb)	- .79493	.04720	.17623	- .19833	.24145
7. (Re)	- .74740	.32167	.06625	.08432	- .15055
8. (So)	- .69450	.32918	.41740	- .02770	.02055
9. (Sc)	- .77145	.49910	- .11871	.19760	.12289
10. (To)	- .84945	- .00086	- .17965	- .19387	.00688
11. (Gi)	- .69252	.37847	- .11983	.37836	.11324
12. (Cm)	- .38065	.13057	.67849	- .44797	.05302
13. (Ac)	- .85804	.09748	.06413	.05659	- .18043
14. (Ai)	- .69178	.05571	- .42322	- .21498	- .14141
15. (Ie)	- .81298	- .16412	- .04905	- .26625	- .02354
16. (Ey)	- .46273	- .31022	- .23210	.30703	.33737
17. (Fx)	.04003	- .23100	- .49481	- .62085	.32575
18. (Fe)	- .03301	.43052	- .26615	- .22709	- .72669

EIGENVALUES

6.43917	3.61030	1.46457	1.23358	1.06305

CUMULATIVE PROPORTION OF TOTAL VARIANCE

.46625	.72766	.83371	.92303	1.00000

Appendix L

FACTOR MATRIX - LOW GROUP

1. (Do)	- .53120	.57773	- .15450	.23296	- .00705
2. (Cs)	- .56397	.03576	- .47874	- .13761	.32942
3. (Sy)	- .54212	.64450	- .20339	.13137	.08261
4. (Sp)	- .22701	.75436	- .24875	- .16801	.03117
5. (Sa)	- .25599	.74080	- .27921	.20217	.17922
6. (Wb)	- .74685	.08523	.36918	- .18818	- .28858
7. (Re)	- .69550	- .29485	.36695	.10298	.26763
8. (So)	- .70891	- .04449	.54316	.15921	- .03972
9. (Sc)	- .66330	- .62643	- .07947	.17706	- .11202
10. (To)	- .78393	- .24722	- .12467	- .18147	- .08753
11. (Gi)	- .58683	- .37697	- .28273	.30785	- .22245
12. (Cm)	- .38526	.39002	.67193	- .17594	.05905
13. (Ac)	- .81459	- .06997	.06239	.19423	- .02325
14. (Ai)	- .61102	- .36836	- .28417	.34413	.18560
15. (Ie)	- .80314	.09867	- .02796	- .29103	.12823
16. (Ey)	- .24002	- .09287	- .56509	.19215	- .49916
17. (Fx)	.01506	- .29598	- .28255	- .67093	.07020
18. (Fe)	.07847	- .46584	- .10718	.42581	.61325

EIGENVALUES

5.84849	3.17578	2.04960	1.33019	1.05974

CUMULATIVE PROPORTION OF TOTAL VARIANCE

.43439	.67026	.82249	.92129	1.00000

Appendix M

Scale Intercorrelation Matrix for the California Psychological Inv.

		Do	Cs	Sy	Sp	Sa	Wb	Re	So	Sc
Do	M:	——	.49	.61	.35	.48	.23	.35	.11	.01
	F:	——	.60	.67	.46	.60	.31	.36	.11	.05
Cs	M:	.49	——	.57	.47	.43	.33	.31	.16	.15
	F:	.60	——	.66	.60	.54	.43	.38	.13	.15
Sy	M:	.61	.57	——	.55	.57	.31	.24	.13	-.03
	F:	.67	.66	——	.63	.60	.46	.33	.18	.11
Sp	M:	.35	.47	.55	——	.48	.28	.00	-.06	-.16
	F:	.46	.60	.63	——	.57	.35	.06	-.02	-.14
Sa	M:	.43	.43	.57	.48	——	.10	.04	-.03	-.28
	F:	.60	.54	.60	.57	——	.12	.09	-.05	-.26
Wb	M:	.23	.33	.31	.28	.10	——	.43	.39	.57
	F:	.31	.43	.46	.35	.12	——	.49	.49	.66
Re	M:	.35	.31	.24	.00	.04	.43	——	.45	.45
	F:	.36	.38	.33	.06	.09	.49	——	.45	.51
So	M:	.11	.16	.13	-.06	-.03	.39	.45	——	.45
	F:	.11	.13	.18	-.02	-.05	.49	.45	——	.52
Sc	M:	.01	.15	-.03	-.16	-.28	.57	.45	.45	——
	F:	.05	.15	.11	-.14	-.26	.66	.51	.52	——
To	M:	.25	.44	.25	.23	.03	.63	.51	.32	.54
	F:	.36	.57	.47	.39	.22	.67	.58	.35	.51
Gi	M:	.24	.32	.22	-.03	-.13	.52	.43	.39	.72
	F:	.28	.36	.34	.06	-.01	.61	.45	.39	.78
Cm	M:	.12	.06	.15	.04	.15	.25	.25	.26	.08
	F:	.13	.08	.21	.07	.10	.27	.31	.34	.14
Ac	M:	.40	.39	.37	.08	.06	.58	.55	.48	.60
	F:	.46	.46	.50	.20	.20	.66	.60	.52	.62
Ai	M:	.03	.37	.02	.18	.03	.34	.35	.12	.36
	F:	.21	.45	.27	.32	.17	.40	.43	.16	.33
Ie	M:	.41	.53	.48	.42	.29	.58	.47	.27	.34
	F:	.44	.60	.58	.51	.34	.66	.54	.35	.40
Py	M:	.21	.29	.17	.23	.00	.39	.22	.13	.41
	F:	.36	.45	.31	.33	.18	.43	.36	.12	.37
Fx	M:	-.14	.19	-.13	.25	-.07	.04	-.06	-.17	.01
	F:	-.08	.19	-.03	.32	.06	.01	-.06	-.20	-.13
Fe	M:	-.05	-.01	-.19	-.30	-.09	-.07	.21	.09	.18
	F:	-.13	-.12	-.14	-.26	-.10	-.07	.18	.19	.12

		To	Gi	Cm	Ac	Ai	Ie	Py	Fx	Fe
Do	M:	.25	.24	.12	.40	.08	.41	.21	-.14	-.05
	F:	.36	.28	.13	.46	.21	.44	.36	-.08	-.13
Cs	M:	.44	.32	.06	.39	.37	.53	.29	.19	-.01
	F:	.57	.36	.08	.46	.45	.60	.45	.19	-.12
Sy	M:	.25	.22	.15	.37	.02	.48	.17	-.13	-.19
	F:	.47	.34	.21	.50	.27	.58	.31	-.03	-.14
Sp	M:	.23	-.03	.04	.08	.18	.42	.23	.25	-.30
	F:	.39	.06	.07	.20	.32	.51	.33	.32	-.26
Sa	M:	.03	-.13	.15	.06	.03	.29	.00	-.07	-.09
	F:	.22	-.01	.10	.20	.17	.34	.18	.06	-.10
Wb	M:	.63	.52	.25	.58	.34	.58	.39	.04	-.07
	F:	.67	.61	.27	.66	.40	.66	.43	.01	-.07
Re	M:	.51	.43	.25	.55	.35	.47	.22	-.06	.21
	F:	.58	.45	.31	.60	.43	.54	.36	-.06	.18
So	M:	.32	.39	.26	.48	.12	.27	.13	-.17	.09
	F:	.35	.39	.34	.52	.16	.35	.12	-.20	.19
Sc	M:	.54	.72	.08	.60	.36	.34	.41	.01	.18
	F:	.51	.78	.14	.62	.33	.40	.37	-.13	.12
To	M:	—	.50	.10	.57	.61	.63	.46	.21	-.04
	F:	—	.50	.21	.58	.63	.70	.47	.19	.03
Gi	M:	.50	—	-.04	.61	.27	.31	.38	-.04	.01
	F:	.50	—	.03	.64	.29	.41	.39	-.13	.03
Cm	M:	.10	-.04	—	.22	-.10	.21	-.10	-.24	-.04
	F:	.21	.03	—	.29	.01	.24	-.01	-.21	.18
Ac	M:	.57	.61	.22	—	.39	.57	.34	-.08	.14
	F:	.58	.64	.29	—	.38	.60	.42	-.18	.06
Ai	M:	.61	.27	-.10	.39	—	.52	.40	.48	.11
	F:	.63	.29	.01	.38	—	.60	.46	.40	-.04
Ie	M:	.63	.31	.21	.57	.52	—	.36	.11	-.06
	F:	.70	.41	.24	.60	.60	—	.50	.16	-.09
Py	M:	.46	.38	-.10	.34	.40	.36	—	.22	.02
	F:	.47	.39	-.01	.42	.46	.50	—	.18	-.14
Fx	M:	.21	-.04	-.24	-.08	.48	.11	.22	—	.04
	F:	.19	-.13	-.21	-.18	.40	.16	.18	—	-.10
Fe	M:	-.04	.01	-.04	.14	.11	-.06	.02	.04	—
	F:	.03	.03	.18	.06	-.04	-.09	-.14	-.10	—

The intercorrelation matrix for males contains the unweighted mean coefficient from five indivdual matrices, totaling 4,098 cases. The matrix for females contains the unweighted mean coefficient from five individual matrices, totaling 5,083 cases. The five individual matrices for males were: high school students (N=3,572); college students (N=173); miltary officers (N=153 & N=100); prison inmates (N=100). For females, the individual samples were: high school students (N=4,056); college students (N=423,N=294, & N=175); prison inmates (N=135).

Appendix N

Comparison of Errors Made On Various Series In Adaptation of Dunn's Visual Discrimination Task (Within Presentations).

	High-Achievers				Low-Achievers			
	d	σ	t	p	d	σ	t	p
X (S 1) -X (Mt 1)	.35	.18	1.94	< .05	.05	.16	.31	NS
X (S 2) -X (Mt 2)	.24	.13	1.85	< .05	-.11	.18	.61	NS
X (S 1) -X (Ft 1)	.50	.18	2.78	< .005	.13	.14	.93	NS
X (S 2) -X (Ft 2)	-.07	.14	.50	NS	-.09	.16	.56	NS
X (S 1) -X (Mn 1)	.34	.19	1.79	< .05	.23	.16	1.44	NS
X (S 2) -X (Mn 2)	.05	.14	.36	NS	.08	.15	.53	NS
X (S 1) -X (Fn 1)	.13	.20	.65	NS	.03	.19	.16	NS
X (S 2) -X (Fn 2)	-.22	.16	1.38	NS	.09	.16	.56	NS
X (Mt 1) -X (Ft 1)	.15	.16	.94	NS	.08	.12	.67	NS
X (Mt 2) -X (Ft 2)	-.31	.11	2.82	< .005	.02	.18	.11	NS
X (Mt 1) -X (Mn 1)	-.01	.17	.06	NS	.18	.17	1.06	NS
X (Mt 2) -X (Mn 2)	-.19	.11	1.72	NS	.19	.18	1.06	NS
X (Mt 1) -X (Fn 1)	-.22	.18	1.22	NS	.02	.18	.11	NS
X (Mt 2) -X (Fn 2)	-.46	.14	3.29	< .005	.02	.18	.11	NS
X (Ft 1) -X (Mn 1)	-.16	.17	.94	NS	.10	.13	.77	NS
X (Ft 2) -X (Mn 2)	.12	.12	1.00	NS	.17	.16	1.06	NS
X (Ft 1) -X (Fn 1)	-.37	.18	2.06	< .05	-.10	.17	.59	NS
X (Ft 2) -X (Fn 2)	-.15	.15	1.00	NS	.00	.17	.00	NS
X (Mn 1) -X (Fn 1)	-.21	.19	1.11	NS	-.20	.19	1.05	NS
X (Mn 2) -X (Fn 2)	-.27	.15	1.80	< .05	-.17	.15	1.13	NS

Legend:
S = Sample
Mt= Male, threatening
Mn= Male, nurturing
Ft= Female, threatening
Fn= Female, nurturing

Appendix O

Differences in Errors Made on Adaptation of Dunn's Visual Discrimination Task, Between Groups.

			σ	t	p
S (H 1) - S (L 1)	=	.27	.18	1.50	< .1 < .05 (NS)
S (H 2) - S (L 2)	=	.01	.19	.05	NS
C (H 1) - C (L 1)	=	.59	.58	1.02	NS
C (H 2) - C (L 2)	=	.20	.46	.43	NS
Mt (H 1) - Mt (L 1)	=	.03	.15	.20	NS
Mt (H 2) - Mt (L 2)	=	.34	.15	2.27	$p < .05 < .01$*
Ft (H 1) - Ft (L 1)	=	.10	.13	.77	NS
Ft (H 2) - Ft (L 2)	=	.01	.15	.07	NS
Mn (H 1) - Mn (L 1)	=	.16	.17	.94	NS
Mn (H 2) - Mn (L 2)	=	.04	.13	.31	NS
Fn (H 1) - Fn (L 1)	=	.17	.20	.85	NS
Fn (H 2) - Fn (L 2)	=	.14	.17	.82	NS

Legend:

Fn = Female,nurturing
Ft = Female, threatening
Mn = Male, nurturing
Mt = Male, threatening
S = Sample (neutral)
C = Total for presentation